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THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXI.—No. 3847. OCTOBER 27, 1916.

THE POET GRAY AS A PIONEER OF GOTHIC ARCHITECTURE.

WHEN in August, 1750, Gray, in the "Long Story," made fun of the heavy mullions and useless passages of the Tudor house he loved, its

Rich windows that exclude the light,
And passages that lead to nothing,

he wrote from no want of appreciation of the old manor of Stoke Poges, in which, as it turned out, he was to make the only women friends of his singularly male if not masculine life. Unfortunately he has left no prose description of the place, only an account of the disappearance of the old furniture from the manor "when the Huntingdons broke," *temp.* Elizabeth. The manor-house disappeared in 1789, and was replaced by the classical mansion familiar to countless pilgrims to the scene of the "Elegy in a Country Churchyard," a building begun by Nasmyth and finished by Wyatt, who, though he is familiar to us as the leading architect of the Gothic Revival, did a good deal of work in the Palladian manner before the beginning of the nineteenth century.

Like most men of his age, Gray admired Greek architecture, but, unlike them, he had a real appreciation of what he calls the "Gothic Classicks,"* though what these Classicks were—for he talks of reading them—we have no means of knowing. In the same letter he protests against "the *Batty-Langley Manner*, as shown in his book of bad designs,"† and a month later (September 18, 1754) he is writing with enthusiasm of Horace Walpole's experiments: "I am glad you enter into the Spirit of Strawberry Castle; it has a purity and propriety of Gothicism in it (with very few exceptions) that I have not seen elsewhere," though he found Walpole's later additions less admirable and accused him of degenerating into "finery." How greatly his taste and knowledge developed in the next few years the passages that follow will show, and we shall see reason to lament that in this, as in many other ways, Gray's knowledge, so far in advance of his time, bore no fruit commensurate with the promise of his mind.

Gray's only expression of wonder at the glories of French Gothic belongs to his only foreign tour, that undertaken with Horace Walpole when the two left Cambridge, which lasted nearly three years and removed all danger of provincialism from his otherwise sequestered life. All he has to say of Amiens—and be it remembered that he is only four-and-twenty and is setting out with his dearest friend to see the world—is that it is "just what that of Canterbury must have been before the Reformation. It is about the same size, a huge Gothic building, beset on the outside with thousands of small statues, and within adorned with beautiful painted windows, and a vast number of chapels dressed out in all their finery of altar-pieces, embroidery, gilding, and marble." A couple of months later he saw the cathedral of Reims, "a vast Gothic building of a surprising beauty and lightness, all covered over with a profusion of little statues and other ornaments." He was not interested in the brick churches of Italy, but was "struck dumb with wonder" at the glories of St. Peter's, and admired Rome and its sights, "the most picturesque and noble one can imagine," with all the enthusiasm of which he was capable. We find him seven years later (September, 1746) recommending many books on Roman antiquities to Wharton for his college library, but none on Gothic, which looks as if he were still in the stage of considering the latter as a subject for the individual rather than one for serious study. His views were to undergo a great change, if we may judge from the impression his conversation made twenty years later on his friend, the Reverend Mr. Norton Nicholls, in whose "Reminiscences" we read that "Mr. Gray's love of and knowledge in Gothic architecture are well known; he contended particularly for the superiority of its effect in churches, and, besides, admired the elegance and good taste of many of its ornaments. I remember his saying, though I have forgotten the building to which the observation was applied, 'Call this what you please, but you must allow that it is beautiful.' He did not make the distinction, which it seems now the fashion to make between *Saxon* and *Norman*; I never heard the latter term from him. And, indeed, those who make this distinction have never, to my apprehension, explained the difference. He said that he knew no instance of a *pointed* arch before the reign of King John; in which, I understand, Carter, the great Gothic critic [John Carter, F.S.A.] agrees with him. All round arches since the age of Roman architecture he called Saxon,* with their zigzag and other well-known appropriate ornaments, and these he attributed to a period not more recent than the reign of King John." In a letter to Mason of February 8, 1753, Gray explains his view that it was in the reign of Henry III. "that the beauty of the Gothic architecture began to appear." Gray goes on, "All the buildings of Henry II.'s time are of a clumsy and heavy proportion, with a few rude and awkward ornaments; and this style continues to the beginning of Henry III.'s reign, though with a little improvement, as in the nave of Fountains Abbey, etc. Then all at once come in the tall piqued arches, the light clustered columns, the capital of curling foliage, the fretted tabernacles and vaultings, and a profusion of statues, etc., that constitute the good Gothic style, together with decreasing and flying buttresses and pinnacles on the outside."

Seven years later Gray, in writing to Walpole on the latter's "Anecdotes of Painting," controverted the latter's idea that Gothic seems to have been at its perfection about the reign of Henry IV. "I beg leave to differ as to the era of Gothic perfection. There is nothing finer than the nave of York Minster (in a great and simple style), or than the choir of the same church (in the rich and filigrane workmanship). But these are of Edward III.'s reign, the first in the beginning and the latter in the end of it. The Lady Chapel (now Trinity Church) at Ely and the lantern tower in the same cathedral are noble works of the same time. I mention these as great things; but if we must take our idea from little ones, the Chapel of Bishop West (also at Ely), who died in 1533, 24 Henry VIII., surpasses all other things of the kind."

In writing to Mr. Bentham, the author of the "History of Ely," Gray sums up his necessarily imperfect theories as to Norman or "Saxon" work by a number of examples that prove the extent of his knowledge and powers of observation.

After noting that Bentham's book is deficient in one or two points, "especially in the time between Henry VI. and the Reformation, when the art was indeed at its height," he adds,

* Letter to Wharton, August 13 [1754].

† Either "Ancient Architecture Restored and Improved" (1741 and 1742) or "Gothic Architecture" (1747). It was in the latter book that Langley set forth his scheme for five new Orders.

* In a later letter (April 18, 1770) Gray uses the word semi-Saxon to describe the ruins of Kirkstall Abbey, built in the reign of Stephen.

"Possibly the pointed arch might take its rise from those arcades we see in the early Norman (or Saxon) buildings on walls, where the semicircular arches cross and intersect each other, and form thereby at their intersection exactly a narrow and sharp-pointed arch. In the wall south of the choir at St. Cross is a facing of such wide, round, interlaced arches by way of ornament and a flat vacant space; only so much of it as lies between the legs of the two neighbouring arches, where they cross each other, is pierced through the fabric and forms a little range of long-pointed windows. It is of King Stephen's time." It is in the wonders of Gothic art that Gray's mind finds its best analogy; it has space for the gloom and for the filigrane, for learned construction and for fantasies run riot in stone, and it was no ignorant nor biased critic who spoke of the author of the "Elegy" as "perhaps the most learned man in Europe."

NOTES.

Delay in Building.

THE loss which is being incurred through the war in financial transactions connected with building cannot easily be measured. In the case of one important work, the constructive progress of which was to be prohibited, it was fortunately proved up to the hilt that the loss caused by delay would run into some thousands of pounds. It is certainly a pitiable spectacle to see so many rusting frameworks of large buildings, and it was a pleasure to note in one recent instance in Kingsway that work had been resumed. In a building under construction lately where huge cornice blocks had been fixed it was obvious enough that the upper portions of wall which would hold them down in position must be proceeded with; but many very awkward conditions have been caused by compulsory delays which are not so readily realised. The breaking of contracts alone appears to suggest a fruitful crop of troubles for settlement on the advent of peace. Those interested in building industries will, however, have wondered where all those capable workmen of forty-five years and over have disappeared to and whether munition work has really swallowed them up.

Free Discussion.

THE President of the London Master Builders' Assocn. wrote recently to the *Morning Post* regarding a statement that industrial disputes would often be avoided if men could talk freely to their employers. Mr. Hill says the difficulty does not exist in the building trade in the London district, and we believe, from our experience, he is correct in saying so. He quotes a rule, which forms part of the agreement between the London Master Builders and the various trades, under which the employer binds himself to see any official representative of the men by appointment during business hours. We are sure that most difficulties which arise can be solved by fair discussion between man and man, and such discussions usually result in a better understanding than agreements reached after correspondence. The Eastern saying, "Oh that mine enemy had written a book!" is another way of emphasising the dangers of writing. A statement made verbally will often be understood, whereas the same thing written suggests a somewhat different meaning. A misunderstanding is frequently corrected at an interview when it would be accentuated by a more formal method of communication.

"The Devil and the Deep Sea."

THE *Times* of the 19th inst. contains a short note of Mr. Justice Bray's judgment in the case of Metropolitan Water Board *v.* Dick, Kerr, & Co., which we discussed in an article under the heading "The Devil and the Deep Sea" in our issue for August 11. His lordship based his judgment on two cases in the House of Lords—Horlock *v.* Beal (1916, A.C. 486) and the Tamplin Steamship Company *v.* the Anglo-Mexican Petroleum Products Company (1916, *Weekly Notes*, 300). In this latter case it was held that the principle upon which the courts absolve innocent parties from the performance of their contracts is that there is an implied term in the contract entitling them to be absolved. Applying this principle to the contract in question, the learned Judge held that the intention of the parties as shown by the contract was that the plaintiff's engineer could extend the time for performance to every possible event which might delay the completion of the contract. He also found as a fact that the contract would not be frustrated by delay during the continuance of the war. We do not know whether this finding of fact will prevent an appeal, but if so it is to be hoped that the attention of the Government will be drawn to this case, which is of vital importance to those engaged in large engineering works of this description. The two cases in the House of Lords were dealing with very different matters. In the first it was held that the internment of a vessel and imprisonment of the crew rendered the contract impossible and the seamen ceased to be entitled to wages; in the second case, which contains the expression of the law especially quoted by Mr. Justice Bray, a ship chartered to certain persons on certain terms was requisitioned by the Government, and the owners contended that this determined the charter, and the majority of the House of Lords held that this was not the case. In that case, however, it is to be noticed that the shipowner continued to receive the money for the hire and neither party was damnified; indeed the charterer received more than for his previous user of the ship. The facts in these cases have nothing in common with those in the case we are considering, so the law expressed in them is being applied on general principles to a different set of circumstances. It really seems inconceivable that the parties to an engineering contract such as that in Dick, Kerr's case can be taken to have contemplated the suspension of works of that description owing to the intervention of the Government for the national necessity and for a term the duration of which no one can estimate in the least.

Capital and Labour.

UNDER the heading "Capital and Labour" Mr. E. B. Osborn contributed an article in the *Morning Post* recently. He says Mr. Winston Churchill, in advising us to "look after the war and let after the war look after itself," utters a foolish epigram. It would suit politicians to carry out such a programme and reserve a great issue for barren political discussion, but it will not suit the nation, which is determined to set the national house in order and to be ready for the "war after the war." The best minds in the country are already working out the lines of reconstruction, which involve a tariff for health as well as wealth, a system of education which will fit men for careers and develop character, and lastly the reconciliation of capital and labour. Only by the united efforts of both capital and labour can the country be saved from the "dumped-in" products of Germany, who will be able to employ the cheapest labour after the war. The capitalist will have to give up the fallacy of believing his chief enemy is his rival "over the way," as well as his prejudice against paying high wages, and labour will have to abandon the limitations hitherto enforced or encouraged by trades unions, and with it the pastime of representing the employer as his enemy. We are glad that Mr. Osborn stigmatises "the everlasting talk about the necessity of thrift" as overdone. As he pithily says, "The truth is that the whole existence of the average working man with a family to keep is an orgy of thrift."

Migration of Sotheby's.

WITH the approaching retirement of Mr. Tom Hodge, senior partner of Messrs. Sotheby, Wilkinson, & Hodge, the business and sales will be transferred to the Doré Gallery, No. 35, New Bond-street, which was opened in 1868 for an exhibition of Gustave Doré's pictures and stands on the site of the old "Black Horse" tavern. Mr. Tom Hodge, son of the late E. Grose Hodge, F.S.A. (*ob.* 1907), succeeded his father as senior partner when the latter retired from the business in 1904, having been sole proprietor since the death in 1894 of Mr. John Wilkinson. The change we indicate will remove an old-established business from the Strand district, for it was founded in 1744 by Samuel Baker in York-street, Covent Garden. Baker died in 1778; in 1804 his partner, George Leigh, and Leigh's nephew, John Sotheby, removed to Nos. 140-1, Strand (opposite Catherine-street, and since pulled down), which had been the "Buchanan's Head" of Andrew Millar and afterwards of his apprentice, Alderman Thomas Cadell, the famous publishers, and occupied the site of Jacob Tonson's "Shakespeare's Head." In 1818 Samuel, son of John Sotheby, went to Wellington-street, Strand, where new sale and catalogue rooms were added about twenty years ago by the late W. Emden, architect. Sotheby's justly ranks as the oldest house after its kind in the world; they sold the libraries of Sir William Tite and James Paine, the architects, of Dr. Richard Mead, Oliver St. John, Addison, John Wilkes, David Mallet, Lord Bute, Granville Sharp, Porson, Malone, Prince Talleyrand, Dr. Burney, John Nichols and J. Gough Nichols, and the Roxburghe, Ashburnham, Hamilton Palace, Amhurst of Hackney, Beckford, Crawford, Huth, Gardner, and many other renowned collections. Charles Grignion's portrait of Samuel Baker, painted in 1771, has been preserved in the parlour in Wellington-street. Seven years ago Mr. F. W. Warre and Mr. G. D. Hobson became members of the firm.

Commercialism and Beauty.

Is commercialism developing a sense of beauty? We are not quite sure what Mr. Gass exactly meant when he asserted this in his presidential address at Manchester. Commercialism surely tends altogether to—commercialism. The very word implies the creation of a money margin which we have to obtain at the expense of our fellow-men, and as a rule the bigger the margin the better we are pleased. But we suppose it is suggested when we find that making things beautiful pays we shall create a wide search for beauty. If that comes about we may be sure that the man of commerce will make us pay for the beauty as heavily as possible. We should like to see art universal and cheap. And is it a very good sign when we have to encourage its culture by such frequent demonstrations of its money value?

ART, CRAFT, AND INDUSTRY.

On Tuesday, at the Royal Academy, under the auspices of the Arts and Crafts Society, Sir Aston Webb, K.C.V.O., presided over a well attended meeting at which papers were read on the above subject.

The Chairman, in introducing Mr. Henry Wilson, President of the Arts and Crafts Society, who read the first paper, after congratulating that gentleman upon the success of the Exhibition, said he took it that its objects were nothing less than the re-birth of the art of England and the encouragement of the growth of a great national art and the association of all arts in the production of our buildings and manufactures. That was rather a large order, but he believed that all present would agree that it would be a desirable thing if it could be done. The first President of the Royal Academy, in one of his famous discourses, said that "the excellence of every art must consist in the complete accomplishment of its purpose." He (Sir Aston Webb) was afraid that they could not often say that a building or a production of manufacture was complete, and it was that completeness which they wanted to see. It was a commonplace to say that the only way by which that could be done was by interesting the public and obtaining a public body of feeling which would require that art should take its proper place in the world in England. The question was—how was that to be done? He believed that our public authorities all wished that it should be so, but they were powerless unless there was a public opinion behind them to back up their efforts, and it was the starting of that public opinion which was their difficulty throughout and which they needed to try and solve. There seemed to him to be three ways only by which that could be done—one by suggestion, one by precept, and one by example. The suggestion of course was in those rooms and galleries at the present time. That Exhibition seemed to him to be not only a suggestion, but an example. That Society had been twenty-eight years at that suggestion, and they had only to look at the homes of England and the productions of the whole of Europe to see how enormously those productions had been influenced for good by the work of that Society. Then they could do something by precept, and by that he meant lectures and papers and dinning into the public in season and out of season the advantages, if one had to put it so low, of art in the production of our commerce. It was difficult to make people realise that the beauty of our cities was a real asset to the State. They knew that the beautification of Paris brought great prosperity to the city, and many beautiful things had been preserved solely on account of their beauty. Even in this wicked and cruel war there was amongst all the civilised nations a recognition that the great works of art should be spared—in speaking of civilised nations he was not referring in any way to Germany. The other means by which they might do something to attain the end they aimed at was by example, and he might mention two interesting instances which had recently come under his notice. One was in connection with a large chapel which they were anxious to have decorated by one of our great painters. The objection was raised that painting was not permanent. Fortunately, however, the very institution happened to have a picture which had been in the city for about 250 years, which was taken into the country and washed with soap and water so that it appeared as bright almost as when it was painted. Experts said that the picture was good for another 250 years, which meant 500 years for the life of a picture, which he thought ought to be permanent enough for anybody. The result of that example was that the painter had been commissioned to paint the chapel, and he was now making it glorious. The other example which he had to do with was the decorating of the hall in the Devons-road London County Council School at Bow, which was being done through the Professional War Relief Committee. The subject chosen was "Empire," the picture was finished, and was going to be unveiled to the public next month. He hoped that example would induce other people to do something of the same kind and that the children of other schools might have an object-lesson of the greatness of our Empire shown to them on the walls of their school halls.

Mr. Henry Wilson in the course of his paper said that the words "art, craft, and industry" had by constant use lost something of their original meaning. If they substituted the almost equivalent words, "arrangement, handiwork, and machine work," they would find that the problems in their inter-relations became somewhat simplified. All art was arrangement, all craft was in the main hand work, and industry was machine work. When hand work and industry or machine work were properly co-ordinated art—that was arrangement at its highest. None of the three could properly exist or reach its full development without the others—each must be in harmonious relations with the other two. The painter who was commonly supposed to be the most independent of the machine relied on it for many things, and in like manner the craftsman. The fundamental defect of machine work had been that the expenditure of thought on the product had not been equal to that displayed in the making of the machine. Wages had been cut down to the lowest possible limit, whereas to get the full value out of a machine it must be supervised or worked by a craftsman or an artist who made it his servant. The many beautiful textiles shown in that Exhibition proved how gladly the machine responded to the man. He was convinced that they had the men and the women who were capable of this work of regeneration—their task should be to see that they were given their opportunity. Give the workman time, the means to live, and incentive to learn, and he would desire to create and in some degree seek to become an artist. That, however, could not be done so long as employers only paid labourers' wages. They must give higher wages, and along with that higher education. The hand worker or craftsman needed his encouragement from the manufacturer and stimulus from the artist; the artist needed opportunity for the use of his skill in civic service and he needed recognition by the industrial community. The nearer the work of the sculptor, the architect, and the painter approached to a national industry, the more perfect their production and the more healthy and vigorous the nation. If the manufacturers of England would call in the craftsmen and artists to their counsels all the world would gain.

Professor Image said that as far as the relations between art, crafts and industry were concerned, what he thought we needed in the present day of judgment was a union between fine sense and common sense. Thirty years nearly had gone by since the Arts and Crafts Society sprang into existence, but the needs and problems of 1916 were not entirely identical with the needs and problems of 1887. Thirty years ago the immediate cail was to enlarge man's whole conception of the meaning and scope of art. He was far from suggesting that nothing further remained to be done in that direction, but to-day it was the question of artistic industries that peremptorily faced them, and by artistic industries he meant that overwhelming amount of work into the production of which machinery must enter. To his mind machinery and good art were not incompatible, and to say that they could not be reconciled was uncultured and ludicrous and a delusion of the devil. He knew that some would counsel the restriction of machinery to what they called the constructive side of fabrics and ornaments, but those were counsels of perfection only for the saints. Amidst the mass of pernicious rubbish with which we were inundated it was quite possible to come across things into the production of which machinery had entered which were things of beauty. No sane man would pretend that they were comparable with things which man could make with his hands, but in their place they were beautiful, and the man was unreasonable who persistently turned his back upon all in the world except the best.

Mr. Reginald Blomfield, R.A., said he would like to congratulate Mr. Wilson and his colleagues on the splendid Exhibition they had got together and also on the tenacity with which in the main they had adhered to the traditions of the founders of the Society—William Morris, Crane, Sanderson, Lethaby, Sumner, and others. He (Mr. Blomfield) had still very pleasant recollections of their labours in the New Gallery, in starting the Society. They had an idea that if an artist was a good man and took pleasure in his work he would be able to convey some of that pleasure to other people, and in that way they hoped they would be able to a certain extent to regenerate the taste of the country. They also hoped that to some extent they would be able to break through the paralysing commercialism which brooded over the decorative and applied arts in those days, and they thought they would be able to give the true craftsman a chance of showing what he could do. Those early enthusiasms were to a certain extent dimmed by disappointment. Progress had been made, it was true, but it had been very partial and very slow. Educated people paid a great deal more attention nowadays to the arts and understood them a great deal better than they used to. The educated people could take care of themselves—it was not with them that the real question arose. The real question was with the average public—that was to say, with the partly educated—and it was there they must make a dent if things were to move. It was in that connection he would offer a word of warning to his colleagues in the arts. The artist was of course an exceptional being—he felt and saw more keenly than other people. He was a sensitive and highly-strung creature searching for the sheltered and the sequestered life in which he could pursue his visions and ideals. That, however, would not do. He had got to come out of it. All artists and craftsmen had got to come boldly down into the market-place and wrestle stoutly with the granite of stupidity and ignorance. They must cease to regard themselves as exceptional beings and realise that they had duties and responsibilities as members of the community neither less nor more than the butcher, the baker, and the candlestick maker. While this terrible war lasted it was of course the duty of all of them to devote their best energies to the service of the country, but after the war he believed their chance would come. Having referred in terms of satisfaction to some of the trade exhibits shown at the Exhibition, Mr. Blomfield said that, as to employers, it had been the fashion with certain people to attack that class of person, but he would remind them that employers would always remain with them, and they were not all sharks and vampires. On the walls of one of the galleries was a most admirable series of posters, the best things of their kind he had ever seen. He understood they were commissions given by the Metropolitan Railway, and in his view they reflected almost as much credit on the good taste and discrimination of the Company as they did on the skill of the artists themselves. It was such evidence as that which made one think that things were not so bad as they might be. He believed it would be one of the compensations of the war, with its tragic tale of distress and suffering, that it would clear away cant and affectation, insincerity, and that morbid and mischievous strain that had shown itself far too commonly in recent art. It would bring art back to the plain facts of life, and it was there, in the ennoblement of the common things of daily life, that the artist and the craftsman must take their stand.

Other speakers included Mr. Charles Spooner, Mr. C. R. Ashbee, and Mr. Burridge, Secretary of the L.C.C. Arts and Crafts School.

HOSPITAL ALTERATIONS, EXMOUTH.

Alterations are being made to the Exmouth Cottage Hospital. The contract is to provide additional rooms for the staff, and the alterations consist of converting the present kitchen arrangements on the first floor into bedrooms and other accommodation and the erection of new kitchens, scullery, and offices as an addition on the ground floor, and erecting an ambulance-room and extra bedroom at the lodge. Mr. Ernest E. Ellis, of Exmouth and Exeter, is the architect.

INCORPORATED INSTITUTE OF BRITISH DECORATORS.

MR. M. WILLIAMS took the chair on Tuesday night at a meeting of the Incorporated Institute of British Decorators held at Painters' Hall, Little Trinity-lane, when Mr. de Beaupré gave an address on "Colour in Decoration Schemes."

Mr. de Beaupré said he wished to deal rather with everyday art, the commonplace—that which to his mind was lacking in interest. The colour schemes of the large private houses were seen by few, and even the public buildings of the country were not very accessible to the public. Colour decoration was only still the privilege of the rich—of the aristocrat. The democrat was not allowed to see it, and hence it was that the middle class was satisfied with the commonplace given to them to-day, because they knew no better. The painter-decorator was losing his hold on the public, and they had to try and make the art popular. What did they see in the vestibules and halls and staircases of the large public buildings, in banks, and so on, which architecturally were well designed? Nothing but ghostly and ghastly white. The work of the old colourists was never grey, dingy, drab, or undeterminable. He was afraid, however, there was no desire for fine colour for its own sake, and if they took the ordinary problem of the dado and wall and frieze hardly ever did they see a colour which arrested their attention. He asked them to have done being satisfied with the alternatives of pilasters and other panels, plain or enriched, in order to form the vehicle of bringing other colours on the wall. The old Romans used few mouldings on the decorated flanks of their apartments, and there was no reason why they should not split up their walls into simple forms as the Pompeians did. Was it not possible to follow their lead in some simple fashion? The fault of the Pompeian style was that it was over-elaborated; but they could get over that, for they did not want to try to repeat the Loggia of the Vatican. He suggested that the Pompeian example of colour arrangement could be followed without incurring the charge of expense or ostentation. Most of their decorative work to-day was done like a picture-painter did his work—it was too decorative. Even ecclesiastical work was weak and feeble owing to its over-elaboration, and ought to be more on the lines of the scenic painter's work. A simple adaptation of the work of Mantua and Pompeii, as well as the later Italian work at Florence, would save them from the nonsense of the Cubists and the weirdness of the Arts and Crafts people. Mr. Beaupré impressed on his audience the importance of recognising the fact that each style of foliation had its own particular colouring, which was dependent on how that colour came to be used. He had seen so-called Egyptian design covered with modern colour, and it set one's teeth on edge. He also thought it was high time that pressure should be brought on the authorities at South Kensington to give some regard to the study of style in ornament, apart from the colour question.

Mr. Beaumont remarked that there was fine decorative painting work to be seen in London, such as that of Mr. Crace in the National Gallery. To his mind clients of to-day would welcome Alfred Stevens' work or anything on the Italian Renaissance style in a simple manner if there were the people to carry it out. With regard to the charge that there was no colour organisation in the country, he thought in the art schools they found the masters doing their best to bring colour about, and he believed that with the work going on in the schools of London now they had hope for the future.

Mr. Roberson said that by the education brought about by master decorators the public was beginning to appreciate colour. They had to remember, in connection with Pompeian decoration, that nowadays people had fine pictures to hang and the Pompeian decoration would not do for them.

"Truth."

Mr. F. Derwent Wood, A.R.A., Sculptor.

[This interesting work was exhibited in the Royal Academy Exhibition in 1914.]

NEW CHURCH, PORTSMOUTH.

The new church of St. John the Baptist, built in Portsmouth by the Winchester College Mission, situate off Simpson-road, Twyford-avenue, was recently consecrated by the Bishop of Winchester. The church is practically built of brick, the inside walls being of red brick and plaster. It has five bays in the nave and a clerestory, and there is a side chapel. The apse stands on seven arches, and there is an ambulatory. The pillars of the nave are of brick on stone foundations. There is an organ-loft at the north-west and similar raised accommodation on the opposite side. The architect was Mr. John Coleridge, of London, and the builders Messrs. Chapman, Lowry, & Puttick, of Greyshott and Haslemere. The cost of the church, including site, furniture, etc., was £18,500.

LONDON SCHOOL OF MEDICINE FOR WOMEN, BRUNSWICK-SQUARE, W.C.

Two or three weeks ago the Queen opened the buildings that have been added to the London (Royal Free Hospital) School of Medicine for Women in Hunter-street, Brunswick-square, Bloomsbury. The School was originally founded by Dr. Sophia Jex-Blake in 1874, and opened for fourteen students, in a pretty retired garden-house, known as the Pavilion, which, it is said, was built by King George IV. for Mrs. Fitzherbert in Henrietta-street, renamed in 1887 Handel-street, upon the estate of the Foundling Hospital. To that house were added in 1897–1900 the blocks planned and designed by J. M. Brydon, having frontages to Handel and Wakefield streets, and also occupying, in part, the site of five or six old houses in Hunter-street. Those blocks comprise some students' residential quarters, together with the science laboratories and the Mrs. Pfeiffer memorial wing. Of the houses then pulled down that at the corner of Handel and Hunter streets was the home of Dr. Abraham Rees, editor of "Rees' Cyclopædia," 1802–20. The new buildings occupy a site of 5,300 ft. superficial, and have been erected at a cost of £30,000, equipment included, after plans and designs of Messrs. H. V. Ashley & W. Newman, to meet the increased requirements of nearly 390 students.

GENERAL NEWS.

Statue to Colonel Lord Ninian Crichton-Stuart.

Sir W. Goscombe John is engaged upon a statue for South Wales of the late Colonel Lord Ninian Crichton-Stuart, M.P.

A New Justice of the Peace.

Mr. Alexander Johnston, the general manager of the North British Rubber Company, Ltd. (incorporating the Scottish Vulcanite Company), Castle Mills, Edinburgh, has been made a Justice of the Peace for the county of the city of Edinburgh.

School of Art Wood-Carving.

The School of Art Wood-Carving, South Kensington, has been reopened after the usual summer vacation, and we are asked to state that some of the free studentships maintained by means of funds granted to the School by the London County Council are vacant. The day classes of the School are held from nine to one and two to five on five days a week and from nine to one on Saturdays. The evening class meets on Monday and Friday evenings from 7.30 to 9.30. Forms of application for the free studentships and any further particulars relating to the School may be obtained from the Registrar.

Institution of Civil Engineers.

In addition to the awards announced in April for papers read at the meetings, the Council of the Institution of Civil Engineers have made the following awards for papers published in the *Proceedings* without discussion during the Session 1915-16:—Telford Premiums to Messrs. Hubert Mawson (Liverpool), T. W. Keele (Sydney), R. W. Holmes (Wellington, N.Z.), W. Fairley (London), J. M. Greathead (Johannesburg), T. C. Hood (Manmad, India), and J. B. Ball (London); the Manby Premium to Mr. W. C. Cushing (Pittsburg, U.S.A.); and the Crampton Prize to Major C. E. P. Sankey, D.S.O., R.E. (London). The Indian Premiun for 1916 has been awarded to Sir John Benton, K.C.I.E. (Eastbourne).

Town Planning in Birmingham.

At a recent meeting of Birmingham City Council the Lord Mayor brought forward the report of the Town-Planning Committee, and proposed that they be authorised to secure and publish the necessary notices of the intention of the Council to apply to the Local Government Board for authority to prepare a town-planning scheme in respect of an area in the south-west of the city bounded on the north by the southern boundary of the area of Quinton, etc., town plan; on the east by the western boundary of the approved area for the South Birmingham town plan, and on the south and west sides by the city boundary. He said the proposed area covered 9,200 acres and was the largest they had yet tackled in one scheme. It would serve to bring under the influence of the Town Planning Act the whole of the remaining undeveloped area of the city on the south side. It linked up the South Birmingham area on the one side with the Quinton and Harborne area on the other, and followed the boundary of the city all round between the two schemes. It was probable that a very considerable amount of development would take place in that area in the near future, especially in the district of Longbridge, where considerable extensions of works were contemplated. It was likely that a large amount of housing accommodation would be required there, and it was desirable therefore that the area should be town-planned. The area also included Bristol-road, which was the route for one of the projected tram lines, and when that line was completed no doubt a great deal of the land on each side of the road would be developed for building purposes. The resolution was carried. The Lord Mayor also proposed the approval of an amending scheme in respect of an area comprising about 247 acres included in the East Birmingham town-planning scheme, in respect of which a scheme was authorised by the Local Government Board. He said the alterations were nearly all formal in character and were designed to bring the new scheme up to date. The resolution was carried.

Examination in Industrial Design.

In their Report to the Board of Education on the Examination in Art in 1916 the examiners state that they understand that of the candidates entered for the Industrial Design examination very few are known to be definitely occupied in manufacturing industries. The examiners are of opinion that from the various schools of art in the country a much larger number of such candidates should be presented.

University College, London.

Professor F. M. Simpson will deliver two public lectures on "The Churches of the South of France" on Thursdays, October 26 and November 2, at 5.30 p.m., at University College. These lectures are open to the public. Reserved seat tickets will be issued to those who apply for them to the Secretary of University College, London; such applications should enclose a stamped addressed envelope. The lectures will be illustrated by lantern slides.

Stained-Glass Windows.

A series of stained-glass figure windows have been fitted up for the new Municipal Buildings, Stirling, the architect of which is Mr. J. Gaff Gillespie, Glasgow. The large three-light staircase window is illustrative of "King Alexander II. granting the Provost and Burgesses of Stirling, in the year 1226, a charter to hold a weekly market and merchant guild." The three-light window of the Committee-room depicts Science, Literature, and Art. The work was designed and carried out in Messrs. William Meikle & Sons' studios, Glasgow.

Architectural Drawing.

The Board of Education examiners on the Examination in Art in 1916 report as follows in reference to Architectural Drawing:—"The examiners wish to call the attention of students to the objects of the architectural part of the examination. There are two specified aspects of architectural design put before the student, but the test is not intended as one of draughtsmanship as practised in architects' offices, either in respect of drawing-board methods or of the constructional knowledge that regulates architectural design. The qualification of the student that weighs with the examiners is his capacity to appreciate the architectural aspects of the subjects he has the intention of drawing. There is no archæological learning expected beyond the commonplace understanding of the descriptions needed to distinguish the subjects set. There is here no difference from the other subjects of this examination. As the student has been taught to study the figure and draw it from memory, as he has been trained to observe the proportions, anatomies, and poses of action or repose, so, as to architecture, he must study and observe the facts of building. He must perceive the projections, distances, and spaces of air that qualify architectural design, he must note the obvious static qualities of building, but specially he should appreciate the aspects that develop the proportions and quality of its beauty. Always in preparing for this examination he must consider that he is expected to know (1) that the architecture he draws is a real object—not a diagram; (2) that it is a constructed object, not a natural conglomeration of stones or bricks. He is tested for this knowledge through the quality of his draughtsmanship. His use of pencil, pen, or brush must be made efficient for the purpose of expressing the qualities that he has seen in the subjects set him. He apprentices himself to the mastery of this expression—not for the purpose of drawing architecture professionally, but that he may acquire the capacity to draw anything that he sees, whether the regulated exactness of structural design or the—no less regulated—inexactness of natural growth. The best candidates show it immediately, and those who draw the figure best are usually those who can draw architecture with appreciation of its meaning. But the two faults of candidates are still glaringly in evidence. Very many seem unable to draw a column as a real object. Very many have not learnt even to make a line with pencil or pen that can express architectural form."

"Concrete and Constructional Engineering."

The October number of *Concrete and Constructional Engineering* contains much valuable and interesting matter. The issue includes amongst other features a well-illustrated article on the "New Buildings for the Massachusetts Institute of Technology"; Part IV. of an instructive contribution by Mr. Oscar Faber, D.Sc., A.M.Inst., etc., entitled "Researches on Reinforced Concrete Beams, with New Formulæ for Resistance to Shear"; some interesting illustrations of reinforced concrete water towers; an article entitled "Proportioning Concrete by Mechanical Analysis," by Mr. H. S. Manisty, R.E. (S.R.), A.M.Inst.C.E., and a special supplement—Concrete the Money Saver—"Concrete Blocks and How to Make Them."

The British Fire Prevention Committee's Publications.

The British Fire Prevention Committee enters its twentieth winter session this month, and to mark the event it has issued a list of the collection of "Red Books," "Warnings," etc., that have been issued by the Committee since its formation. The list, which is obtainable upon application to the Committee's Registrar at 8, Waterloo-place, London, S.W., covers the wide field of the Committee's activities both in respect of fire protection generally, and also regarding its research work. The Committee's "Red Books" number 204, and of these thirty-five deal with general subjects, mainly such as fire-resisting construction and notable fires. The great Paris Bazaar Fire, the Iroquois Theatre Fire, Chicago, the Brussels Exhibition Fire, the Equitable Building Fire, New York, the Empire Theatre Fire at Edinburgh, and the recent Paris Bon Marché Fire are interesting reports of important fires from which practical lessons have been recorded. The Committee's testing operations are recorded in numerous "Red Books," grouped under such headings as Floors, Partitions, Doors and Shutters, Protection of Window Openings, Girders and Stanchion Coverings, Roofs, Textiles, Extinguishers, and Sundry Fire Tests. Turning to the Committee's quarto journals, these generally deal with the fire preventive organisations of foreign countries, notably in France, Russia, and Italy. The great Baltimore conflagration, however, is also dealt with.

The Civic Survey: South-East Lancashire.

An exhibition of great interest to all concerned in town planning and social betterment is now open at the Geographical Society's Hall, St. Mary's Parsonage, Manchester. It represents the work so far accomplished, during about a year's operations, of the members of the Civic Survey of South-East Lancashire and adjacent districts—professional architects and surveyors. The exhibits fall into six groups, showing (1) a traffic plan of South-East Lancashire; (2) open spaces and other areas of South-East Lancashire; (3) general contoured plans of the same area; (4) a housing survey of Rochdale; (5) plans exhibiting the accessibility from road and rail traffic; (6) rainfall plans. The South-East Lancashire district thus elaborately planned extends from Rivington and Ramsbottom on the north to Altrincham and Stockport on the south; from Mossley and the Yorkshire hills on the east to Leigh and Blackrod on the west. One diagram in process of completion shows the growth of Manchester from 1650 up to the present date in its various stages. The housing survey of Rochdale as illustrated shows the density and distribution of the population. The plans of the whole area of South-East Lancashire show the accessibility of various parts by rail and tramcar, clearly indicating such parts as are not well served by either of these means of transit. One diagram makes clear the area of land utilised for building and the area still vacant, and indicates in a general way the residential and non-residential portions, the public recreation-grounds and parks, cricket grounds, golf courses, private parks and grounds, and houses with large gardens. There is also a large diagram of Liverpool, which shows by a series of dots the density of population in that city, and in what proportion parks and playgrounds are provided.—*Manchester Guardian.*

No. 7, CRANE-COURT, FLEET-STREET.

THE following are the notes which last week we promised to give in connection with the drawing by Mr. Hanslip Fletcher, which we then illustrated :—

Early this year the *Manchester Guardian* did public service in publishing an article dealing with the above, and we are indebted to our contemporary for the illustration of the interior reproduced in our last issue.

There can be no doubt at all but what Wren had a great deal to do with the design of the buildings in Crane-court after the Fire of 1666, and although the majority of the brick houses have been demolished to make way for printing warehouses, there is sufficient evidence to-day in the buildings, still extant, to show how the architect was influenced in his early work by the designs of Pierre le Muet, architect to Louis XIII. Wren's connection with Crane-court belongs to the years 1670–1, when he designed a house for Dr. Barebones at the head of the court, and built several others at the side for this speculator. After the death of Dr. Barebones the house fronting the entrance from Fleet-street remained derelict for years, until the Royal Society, with Newton at the head of affairs, looked about for premises in which to hold their meetings. It was then that Sir Christopher Wren brought the house in Crane-court to the notice of the Society, and he was commissioned forthwith to effect repairs and make it suitable for their requirements. The members of the Royal Society were alive to the necessity of advertising the importance of their meetings to the public; therefore, on the nights when the learned members, bewigged and attired in full regalia, met, two porters in livery kept guard outside the entrance to the court in Fleet-street, and on these occasions the external lamps were lit.

The interior illustrated by Mr. Hanslip Fletcher belongs to the first house on the east side of the court adjoining the site in which Dr. Barebones' house stood. There is nothing to suggest that it once formed part of the Royal Society's premises, but in the design of the decoration and the masterly handling of the ornamental plaster ceiling the Wren influence is unmistakable. Another interesting fact is forthcoming when a study of the staircase is made, for we find that a new one of more elegant pattern was inserted in the year 1760, when the premises became the home of the first circulating library in London. There is much to interest the architect and the antiquary in this house, which belongs to the late seventeenth and eighteenth centuries, whether it is sought for in the character of the first-floor rooms, each replete with its own geometrical ceiling, in the heavy baluster staircases of Wren s time, the lighter turnings of the 1760 period, or in the grand scale of the high interior doors. At present the house and its neighbour are full of the atmosphere we would wish to associate with such a *cul de sac* of literary history. The interior is now used for the offices of a well-known firm of publishers, who have their presses in the attic, and in this follow the tradition of the district which began with Dr. Johnson's famous workshop in Gough-square.

Some extensive alterations were made to the back of the premises in the early nineteenth century, when a tablet bearing the appropriate motto, "Alere Flammam," was built against the wall. At this period the architect who altered the house used up a portion of Wren's carved wood cornice to form a semi-entablature over the pilasters between the back windows. A gentleman who daily frequents the court has considerately forwarded the following lines to record impressions of the *genius loci* :—

ALERE FLAMMAM

When London of her Plague was purged by Burning
The City found her Phœnix in a Wren—
See there his Spires, his gracious Fanes and then
Wi h loving Hand he built a Shrine for Learning
In no retired Place : with Eye discerning
He Built it near the Homes an Marts of Men.
His Traffic done, the worthy citizen
From Silks or Spices, Law or Physick turning
There lit his Torch. Now, when the World's ablaze,
In this fair Shrine Europe one grim grey Camp—
Pa er is doled lest England should lack Beer
In grudging Measure : honest Craftsmen here,
Old Caxton's Followers, keep the ancient Ways,
Make it their Pride to feed the sacred Lamp.

THE SOCIETY OF ARCHITECTS.

A SPECIAL general meeting of the Society of Architects was held at 28, Bedford-square, London, W.C., on Thursday, the 12th inst., the President, Mr. E. C. P. Monson, F.R.I.B.A., in the chair.

The following candidates were elected members, *i.e.* :—Messrs. J. S. Bray, Cardiff; T. M. Davidson, Kroonstadt, O.F.S.; P. J. Munden, Dublin; Irwin G. Smith, Thorpe St. Andrew, Norwich.

The Scrutineers' report on the ballot for the election of officers and Council 1916–17 was then received, showing the following elections :—

President—Mr. E. J. Sadgrove, F.R.I.B.A., London.

Senior Vice-President—Mr. A. Alban H. Scott, London.

Junior Vice-President—Mr. E. J. Partridge, F.S.I., Richmond.

Past-Presidents (*ex-officio*)—Messrs. E. J. Hamilton, Brighton; J. J. Lish, Newcastle-upon-Tyne; E. C. P. Monson, F.R.I.B.A., London; A. E. Pridmore, F.S.I., London; Percy B. Tubbs, F.R.I.B.A., London.

Hon. Secretary—Mr. Noel D. Sheffield, London.

Hon. Treasurer—Mr. J. Herbert Pearson, London.

Hon. Librarian—Mr. Alfred J. Taylor, Bath.

Delegate from South African Branch—Mr. S. C. Dowsett, Johannesburg.

Members of Council—London: Messrs. Henry Adams, M.Inst.C.E., F.S.I., George Baines, F.R.I.B.A., R. Geo. Bare, J. A. Bowden, Herbert O. Ellis, G. Blair Imrie, T. Stewart Inglis, Chas. E. Jackson, Colonel F. S. Leslie, R.E. (Ret.), F. C. Moscrop-Young, George H. Paine, B. R. Tucker. Country: Messrs. P. M. Beaumont, A.M.Inst.C.E., Maldon; B. D. Cancellor, Winchester; Edward Cratney, F.R.I.B.A., Newcastle-upon-Tyne; R. Cecil Davies, Chester; Geo. E. Dickens-Lewis, Aberystwyth; Harry Gill, Nottingham.

Mr. E. J. Hammond (Gillingham) proposed a vote of thanks to the outgoing President, Mr. E. C. P. Monson, who had filled the chair for two years with remarkable success.

Mr. B. R. Tucker (London) seconded the proposition which, on being put to the meeting, was carried with acclamation.

Mr. E. C. P. Monson thanked the members for their expression of appreciation and expressed regret that during his term of office the Society had been unable to accomplish much constructive work in co-operation with other bodies, as they had been met with the statement that contentious points could not be discussed in war-time. He was of opinion that the present was eminently the time for the evolution of a constructive policy, inasmuch as the ordinary work of most professional bodies had been suspended owing to the war. He thought that, as the tendency at the moment was for all classes to work in harmony for the common good, now was the opportunity for the discussion of contentious matters, so that the way might be cleared for a better understanding when these questions were once more raised after the war. He then invested the new President, Mr. Edwin J. Sadgrove, with the chain of office and expressed the hope that during his term of office peace would be declared and the work of the Society taken up with renewed energy.

Mr. Edwin J. Sadgrove expressed his appreciation of the confidence of the members in electing him, and said he would do his utmost to uphold the best traditions of the chair.

Votes of thanks were accorded to the retiring officers and members of the Council, the Scrutineers, and the Secretary and staff.

LIGHTHOUSE CONSTRUCTION MATERIAL AND EQUIPMENT.

The *Gaceta de Madrid* of October 7 publishes the text of Royal Decrees as follows :—(1) Approving the specifications for the construction of a new lighthouse at Cape Silleiro (Province of Pontevedra) and a road of access thereto, at an estimated cost of 158,253 pesetas (about £6,700 at current rate of exchange). The Department of Public Works is authorised to call for tenders in this connection.

LONDON ART NOTES.

THE autumn exhibition of the International Society of Sculptors, Painters, and Gravers at the Grosvenor Gallery is interesting without being in any way especially remarkable. The first room opens with Mr. D. Y. Cameron's luminous view of "Loch Nell," which is to be compared with Mr. E. Buttar's "Eisey Cow Pasture" and Mr. Alfred J. Bennett's moonlight "Brighton from the Cliffs." These are three charming landscapes, entirely modern in their treatment.

We are so used to Mr. Russell Flint as an aquarellist that it is interesting to come upon him here in the "Woodman and Hamadryad" working in oils. The painting is good, but has not the luminous clarity of his water-colours. Mr. Ambrose McEvoy has four paintings in this room, of which "Mrs. Spencer Clay" is the most successful; Mr. William Strang three figure subjects, his "Panchita Zorolla" being especially charming; while Mr. William Orpen has a most original rendering of the "Play Scene in *Hamlet*," which he seems to have imagined as being enacted in some eighteenth-century palace of the Baroque rather than in a sixteenth-century Elsinore.

In the next room Mr. Laszlo has a brilliant study of "Two Indian Officers," and Miss Laura Knight one of her daring efforts of colour, "A Girl with Red Hair." These two artists reappear in the succeeding rooms, Mr. Laszlo in his charmingly alive three-quarter length portrait of "The Hon. Mrs. Myles Ponsonby," Miss Laura Knight in a brilliant "plein-air" of "Boys Swimming" and a theatre study, "Les Sylphides."

Signor Pilade Bertieri has two oil paintings in this exhibition, his "Nature Morte," above Mr. John Lavery's "Heel of Achilles, Hyde Park, 1916," and his "Japonais à la Guitare." Both paintings are sober, reserved in tone, and masterly in handling. A brilliant portrait study is Mr. Louis Thomson's "Portrait" in the Corner Gallery, which comes very close to the actress, Doris Keane, in her famous characterisation of "La Cavallini." We noted among the water-colours Mr. Algernon Newton's "Girl on a Pony," Mr. A. Carruthers Gould's "The Aeroplane," Mr. Russell Flint's "An Olympian," and Mr. Fred Foottet's "The Arno from Fiesole." "The Red Ruin," by Mr. James Pryde, has something of the massive quality of Mr. Frank Brangwyn's design. Messrs. W. Nicholson, Charles Shannon, G. W. Lambert, and Lamorna Birch are here represented, yet when we leave the Grosvenor we feel we have seen some charming paintings, but nothing that has surprised us or opened out new vistas.

The Royal Institute of Oil Painters, which has recently opened its exhibition at 195, Piccadilly, will continue open until about the middle of December. The exhibition keeps up a good level of work without bringing forward any new features of great individual interest. An exception to this remark will be found in Mr. Tom Robertson's remarkable painting, which occupies the place of honour in the large gallery. It gives a singularly beautiful twilight effect over sea and mountain, richly luminous and full of mystery.

To be compared with this are Mr. Louis Sargent's studies of sea and rocky coast in Cornwall; but here the effect sought is that of brilliant sunlight with pronounced tones of blue and purple which are only found on our shores in rare glimpses. Mr. J. W. Simpson's technique in his painting of the nude shows here to good advantage in his four exhibits. The best of these is a study in monochrome, in the first room, of nymphs emergent from the stream.

SECOND-LIEUTENANT D. A. ORD MACKENZIE.

Second-Lieutenant D. A. Ord Mackenzie, London Regiment, who fell on September 24, aged twenty-three years, was the son of Mr. and Mrs. H. Ord Mackenzie, of Bowdon, Cheshire. He was educated at Sedbergh School, and having trained as an engineer entered the service of Messrs. Stewarts & Lloyds, South Africa. He served through the South-West African campaign as a trooper of Hartigan's Horse, upon the disbandment of that regiment he travelled at his own expense to England, and in October, 1915, obtained a commission in the London Regiment.

INDUSTRIAL LIGHTING BY ELECTRICITY.

A MEETING of the Junior Institution of Engineers was held on the 18th inst., when Mr. Frederic H. Taylor, Assoc.M.Inst.E.E., Assoc.M.Inst.M.E., read a paper on "Industrial Lighting by Electricity." In dealing with the lay-out of lighting schemes the author remarked that the tendency of the present day in arranging schemes of artificial lighting was, as in many other matters, to endeavour to crystallise the whole matter as much as possible, and in the case of lighting into three points—that was height of lamp or lighting "unit"; spacing distance; and the candle-power of the unit employed. Proceeding, he said:—"Whilst useful enough and easy of application in new buildings, where the architect is willing to give consideration to the requirements of artificial lighting, in old buildings the points mentioned commonly have to be the subject of part consideration only, in order that other influencing conditions may have necessary consideration. Hard-and-fast rules for the lay-out of artificial lighting in an industrial type of building would therefore appear to the author as undesirable, even if possible of general application. It is true that progress is being made in the direction of deciding as to what is a suitable standard or intensity of illumination for various processes and kinds of work, but this is, and will probably remain, as the minimum illumination necessary rather than the average. Lay-out must therefore be settled not on this point only, but on due consideration of the many other variable points which will be found to enter into almost every case one meets in practice.

A point one would specially draw attention to in this connection is the need of "general" as well as "local" or "individual" lighting in most, if not all, of the premises which the mechanical and the civil engineer have to deal with. Individual or local lighting of sufficient intensity for machine tools, benches, desks, etc., is necessary if each operator is to properly perform his duties. "General" lighting, on the other hand, is equally necessary, for by this proper supervision and discipline are possible and the safety of those persons secured who have to move about through passages and gangways. This need of "general" lighting is, even at the present time, often entirely overlooked.

The "general" lighting should be so arranged that a fairly uniform illumination is produced, say with an allowable variation between maximum and minimum of 20 to 25 per cent., and where individual lighting is additionally provided the value of the former is considered sufficient if of the nature of about 1·5 foot candles. Compared with the recommendations of the Home Office Committee such a figure will seem luxurious, the recommendations referred to being:—

(1) ·25 of a foot candle over "working areas" of workrooms (without prejudice to the illumination required for the work itself), and

(2) ·1 of a foot candle in all parts of factories and workshops not included under (1) and where persons are liable to pass.

Standards of Illumination.

The figures quoted by various authorities show considerable variation in idea as to what is considered necessary, as the following extracts will show:—

In a drawing office—
- (*a*) 6 to 10 foot candles.
- (*b*) 7 " "
- (*c*) 8 " "

In a warehouse or stock-room—
- (*a*) ·5 foot candle.
- (*b*) 1·5 to 2 foot candles.

In a foundry—
- (*a*) 3 to 4 foot candles.
- (*b*) ·4 of a foot candle (minimum).

In offices—
- (*a*) 4 foot candles.
- (*b*) 3 " "

The author would suggest that the adequate standard of illumination is such as will allow the process to be carried on or the work to be done without eye-strain or special effort on the part of the operator. . . .

In the near future probably the greatest importance of a standard of illumination in places coming under the Factory and Workshop Acts will consist in a Government standard of a minimum illumination everywhere. It is to be hoped that when our great country returns once more to the arts of peace that legislation of this character will be enacted, as well as other regulations incidental thereto, which will result in intelligent methods of artificial lighting, profitable to the owner and beneficial to the workman.

Such an event would bring into greater prominence the measurement of illumination, which until recent years had been practically left untouched. By measurements taken at regular intervals of time, any deterioration is detected and the cause of it removed. Deterioration may readily be so gradual as to pass unnoticed, but its results will inevitably occur—that is, imperfect quality or decreased output of work. The modern "illumination" photometer is an instrument which is simple, reliable, cheap in first cost, and well worthy of more extended use.

The Essentials of Satisfactory Illumination.

These may be summed up as comprising:—

(1) Adequacy—that is to say, the degree of illumination produced on the working surface must be sufficient for the work or operation to be properly carried on. On the other hand, over-illumination is quite possible and its effects are naturally harmful.

(2) The lighting unit or source of light must be so placed that the light does not strike directly upon the eye of the operator either when he is engaged in his work or when looking horizontally across the workshop or room. This recommendation of the Home Office Committee may be summed up in the words:—"Light on the object and not in the eye." Thus "glare," whether produced directly or indirectly, should be avoided.

(3) The lighting units should be so placed as to prevent shadows on the work or heavy shadows about those parts of the premises to which the workpeople have access. This does not suggest that an absolutely uniform degree of illumination everywhere is necessary. The opposite is desirable as affording relief by contrast.

(4) Constancy, so far as the degree of illumination is concerned, is also necessary. Where the current is supplied from public lighting systems there is usually little or nothing to complain of in this direction, but where the lighting receives its current from a private plant on the premises constancy of illumination is by no means always prevalent.

Reflection and Colour.

The value of these two factors in artificial illumination is commonly overlooked. As regards the value of "general" reflection—that is to say, from the walls and ceiling—the Factory and Workshop Act has by its insistence as to regular limewashing done much to provide a cheap and effective reflecting surface of the highest order. The experiments carried out at the National Physical Laboratory by the Home Office Departmental Committee, in a room specially fitted out with different methods of lighting, may here be cited. Three systems of lighting were tried—direct, indirect, and shielded. With the walls blackened instead of whitened, the reduction in illumination at the centre of the room was approximately 25 per cent. for direct lighting, 7 per cent. for indirect lighting, and negligible for shielded lighting. The influence of colour in artificial lighting is often overlooked. Lighting of a colour that will enable a person to not only do his work but remain at it for hours at a stretch without feelings of fatigue or depression is obviously desirable. . . .

Direct or Indirect Lighting (?).

As to which of these two systems should be chosen for factory lighting is a question which has been the subject of some considerable argument during the last few years. The use of metal filament lamps of high efficiency, candle-power, and intrinsic brilliancy has undoubtedly made indirect lighting possible where it would be otherwise quite unthinkable. The results of the Home Office Committee's tests in connection with this matter, and which have already been briefly referred to, would suggest that with indirect lighting the illumination was required to be greater than with direct lighting. Even where a comparatively uniform degree of illumination everywhere is required, this can be obtained by modern types of reflector whose characteristics are known to start with, combined with careful spacing of the lighting units.

Reflectors and Fittings.

Obviously for either "direct" or "indirect" lighting the most important item is the reflector, or, as it is more often called, the "shade." Until recent years, for incandescent lighting nothing else scarcely was used but the shallow, conical enamelled iron or opal glass reflector. Custom clung very tenaciously to this, probably on account of cheapness. For years, imported from "another" country, the best one could say of this type of shade was that it was badly made. As a shade it shaded very little else than the ceiling. In combination with a carbon filament lamp it was bad enough, but with a metal filament lamp, with its higher intrinsic brilliancy and extended length of bulb, the evil effects of an unscreened light became infinitely worse. Happily with the war a limit was put on the supply of these goods, with the result that properly-designed reflectors in glass or steel are more open to appreciation in spite of higher first cost. One refers particularly to the prismatic glass reflectors of the "Holophane" type and also to the pressed steel reflectors of the "Benjamin" pattern, intended more particularly for factory service. By the choice of a reflector either of the "extensive," "intensive," or "focusing" type, and with the spacing distance arranged with regard to height, it is easily possible to obtain any desired illumination and with the source of light well screened from the eye."

OBITUARY.

Mr. A. G. Bell.

Mr. Arthur George Bell, who died recently at Southbourne-on-Sea, was the son of Mr. George Bell, founder of the well-known publishing house, and was originally intended for that business. He, however, entered the Slade School, and, going to Paris, studied in the École des Beaux-Arts and in the ateliers of Gérôme and Carolus Duran. He contributed constantly to the exhibitions of the Royal Academy, of the Royal Institute of Painters in Water-Colours, and of Oil Painters. A considerable sum of money was raised last November by an exhibition he held in his studio at Southbourne in aid of soldiers and sailors blinded in the war. He illustrated many books written by his wife, *née* Meugens ("N. d'Anvers").

Lieutenant W. M. Jenkins.

The death in action has been notified of Lieutenant William M. Jenkins, of the Welsh Pioneer Battalion. Lieutenant Jenkins, who was twenty-five, was an architect by profession, and when he enlisted he was in sole charge of the Land Valuation Department at Rhyl, Prestatyn, and St. Asaph, North Wales. He was articled to Mr. Thomas Gibb, of Port Talbot, and was a very promising young man. He was placed eleventh in the United Kingdom in the Intermediate Examination of the R.I.B.A., and he was also Professional Associate of the Surveyors' Institution.

Second-Lieutenant S. Angus, R.E., A.M.Inst.C.E.

Second-Lieutenant Stewart Angus, R.E., who was killed in action on July 1, aged twenty-six years, was the only surviving son of Mr. David Angus, M.Inst.C.E., and Mrs. Angus, of No. 9, Muswell-road, N. He was educated at Edinburgh Academy, and graduated B.Sc. in Engineering at Edinburgh University in 1912, being then a cadet in the R.E. unit of the O.T.C. Whilst a student he also served an apprenticeship of three years to Messrs. Stevenson, of Edinburgh, civil engineers. He then proceeded to Argentina as an assistant engineer on the construction staff of the Buenos Ayres Great Southern Railway. He was gazetted to the Royal Engineers.

Leading Contents.

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ILLUSTRATIONS.

Ironmongers' Hall.

OUR inset illustrations, comprising plans and views of Ironmongers' Hall, are given in connection with an article on the Company on page 263.

BOOKS.

Hydraulic Tables for the Flow of Water. By JOSEPH H. HARPER. (London: Constable & Co. Price 8s. 6d. net.)

THIS book deals with the flow of water in circular pipes under pressure, timber flumes, open channels, and egg-shaped sewers, and the object of the author has been to cover the field of hydraulic flow with a network of solved problems wherein the reader may find something that will be tolerably near any question that may arise. Generally the approximate information applicable to any particular problem may be obtained by direct inspection from the tables, and with the aid of a little mental work in addition a very close approximation is possible.

The volume contains over thirty tables and twenty-two charts, and these are prepared by the author according to the D'Arcy, Bazin, and Kutter's formulæ, with the necessary explanatory notes as to the values of the different formulæ and the methods of reading the tables. An interesting chapter is devoted to miscellaneous tables and problems, and this is followed by a section on which hydraulic formulæ are fully discussed, including both old and modern methods of calculation. The charts which conclude the book are given in the form of an appendix, and the object of constructing these has been to secure a fair comparison of the formulæ used in computing the flowage tables when applied to a systematic gradation of channel capacities, with a broad variation in the angles of inclination and a wide range in the degrees of roughness employed.

The volume is well arranged and the matter well expressed, and it should prove extremely useful to engineers as a practical assistant when making preliminary calculations or checking hydraulic computations.

The Mechanical Handling and Storing of Material. By GEORGE FREDERICK ZIMMER, A.M.Inst.C.E. (London: Crosby Lockwood & Son. Price 42s. net.)

THE great progress that is being made in the industrial world renders the question of handling and storing of material very important, and there are very few factories that can afford to dispense with mechanical devices for transporting the raw materials and finished products.

In some cases simple traveller cranes are employed and in others various types of conveyors are used, each being dependent upon the size of the works, the nature of the industry, and the far-sightedness of the employer.

The author of this new volume deals with practically every known type of mechanical device, from the simple arrangements required in a small factory to the large plant necessary in docks and similar establishments, and some of the latter constitute fine examples of engineering practice both as regards conception and execution.

The text is divided into sections under the headings of "Continuous Handling of Material," "Continuous Handling of Material by Pneumatic and Hydraulic Means," "Intermittent Handling of Material," "Unloading and Loading Appliances," "Miscellaneous Installations," and "The Automatic Weighing of Material." Each of these sections contains several chapters devoted to appliances suitable for specific works and purposes, with photographs and drawings illustrating actual installations and the author's suggestions to suit particular circumstances.

In dealing with the necessity for the mechanical handling of raw material the author gives the official returns for the mineral produce of the United Kingdom for the year 1913, and this amounts to the immense quantity of 354,890,867 tons. It will be obvious that such a quantity can only be economically handled by machinery, and it is necessary for employers and engineers to keep in touch with such modern methods as are described in this volume.

Much of the work which is explained is of such a special nature that, although extremely interesting, it will only be useful to specialists who are engaged in one particular type of engineering, but there are also many examples given which will be of service to engineers generally. It is quite impossible to describe even a few of the devices illustrated in a short review, but we can thoroughly recommend the book to all our readers as an excellent one which deals with an interesting subject.

BOOKS RECEIVED.

THE CHURCH OF KAISARIANI IN ATTICA. By Rev. J. Arnott Hamilton, M.A. (Aberdeen: W. Jolly & Sons. Price 1s.)

PICTURES OF THE WONDER OF WORK. By Joseph Pennell. (London: Wm. Heinemann. Price 7s. 6d. net.)

ARCHITECTURAL SKETCHING AND DRAWING IN PERSPECTIVE. By H. W. Roberts. (London: B. T. Batsford, Ltd. Price 7s. 6d. net.)

FIFTY YEARS AGO.

Houses on Speculation.

SIR,—I recently visited an old friend of mine in the Barking-road, who informed me that houses were being run up in the undrained swampy marsh, and that in very soft places they stamped shavings and straw into the mud as a *foundation* to lay the first course of bricks thereon. I went to see this atrocious work. It was indeed quite true. (I should like to have stamped the instigator in as a warning to others.) A district surveyor is unknown there, so they do as they like—build anywhere and anyhow, for the demand is great. In these wretchedly damp abodes labouring men exist.

Is there no help—are there no means to remedy this slow murdering of hardworking poor? Were an action to be brought on behalf of some widow and orphans (no legal jugglery of appeal to higher tribunals to be allowed) it might tend to stop such diabolical speculations. R. T.

[*** From the *Builder* of October 27, 1866.—ED.]

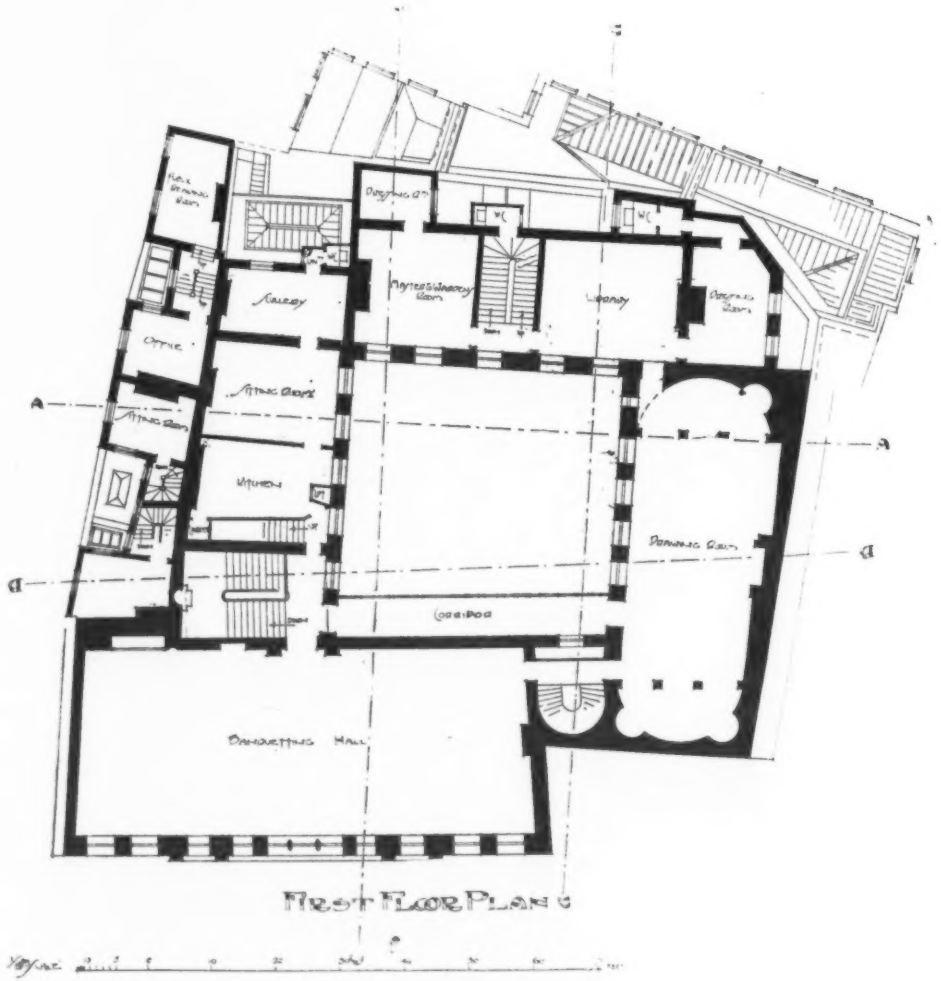
COTTAGE NEAR BEXHILL-ON-SEA.

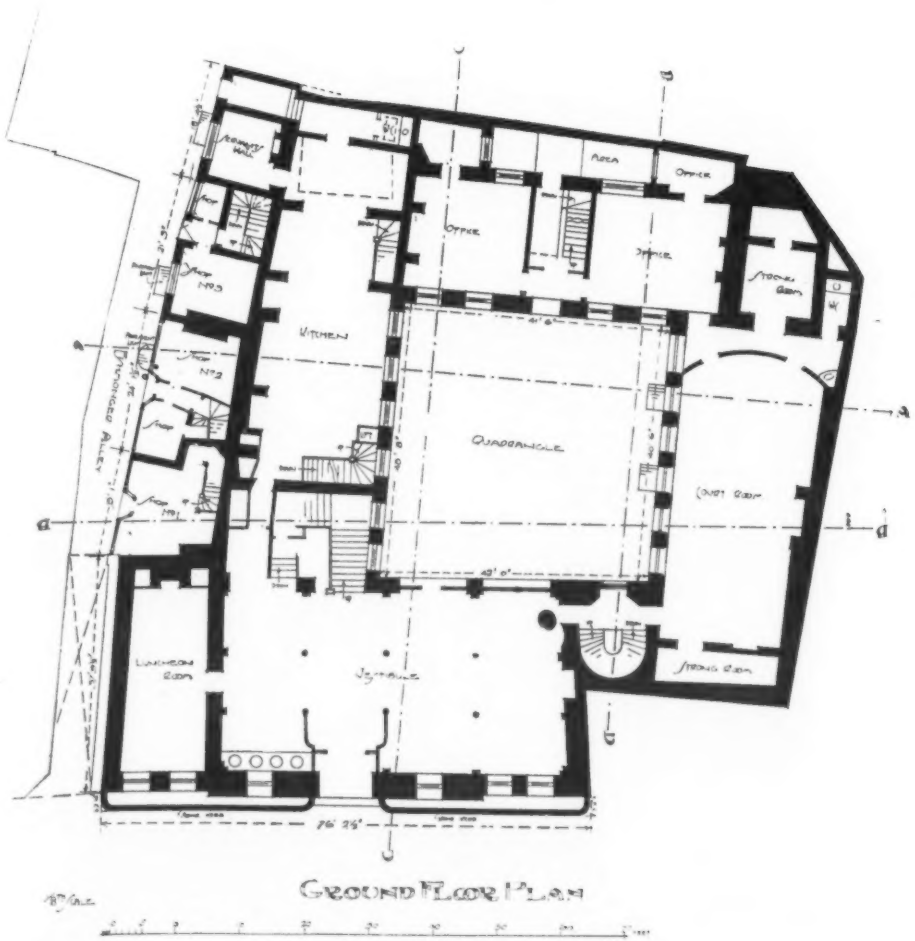
THE cottage near Bexhill-on-Sea, as far as the exterior is concerned, tries to harmonise itself with its natural surroundings by the careful choice of materials and by workmanship of the old homely kind. Those who build week-end cottages in the country usually choose some place which they profess to admire for its rural charm, which they forthwith proceed to destroy by all the arts in which the modern builder is a past-master. In the end they produce a little Cockney villa which tries its best to look like a real cottage, and then they set themselves to lay-out the garden with all the latest fashions in pergolas and paving. It is perhaps too much to expect that the modern architect should actually add to the beauty of the country by his work as the old uneducated builders did. He may at least try not to disfigure it unnecessarily, and by choice of materials which blend with their surroundings to make his blot on the scene at least not too conspicuous a blot.

Such is the modest claim of this cottage near Bexhill, and the charm of its interior chiefly consists in the excellent arrangements of old cottage furnishings and fabrics made by its owners. M. H. BAILLIE SCOTT.

Cottage near Bexhill-on-Sea.

Mr. M. H. Baillie Scott, Architect.

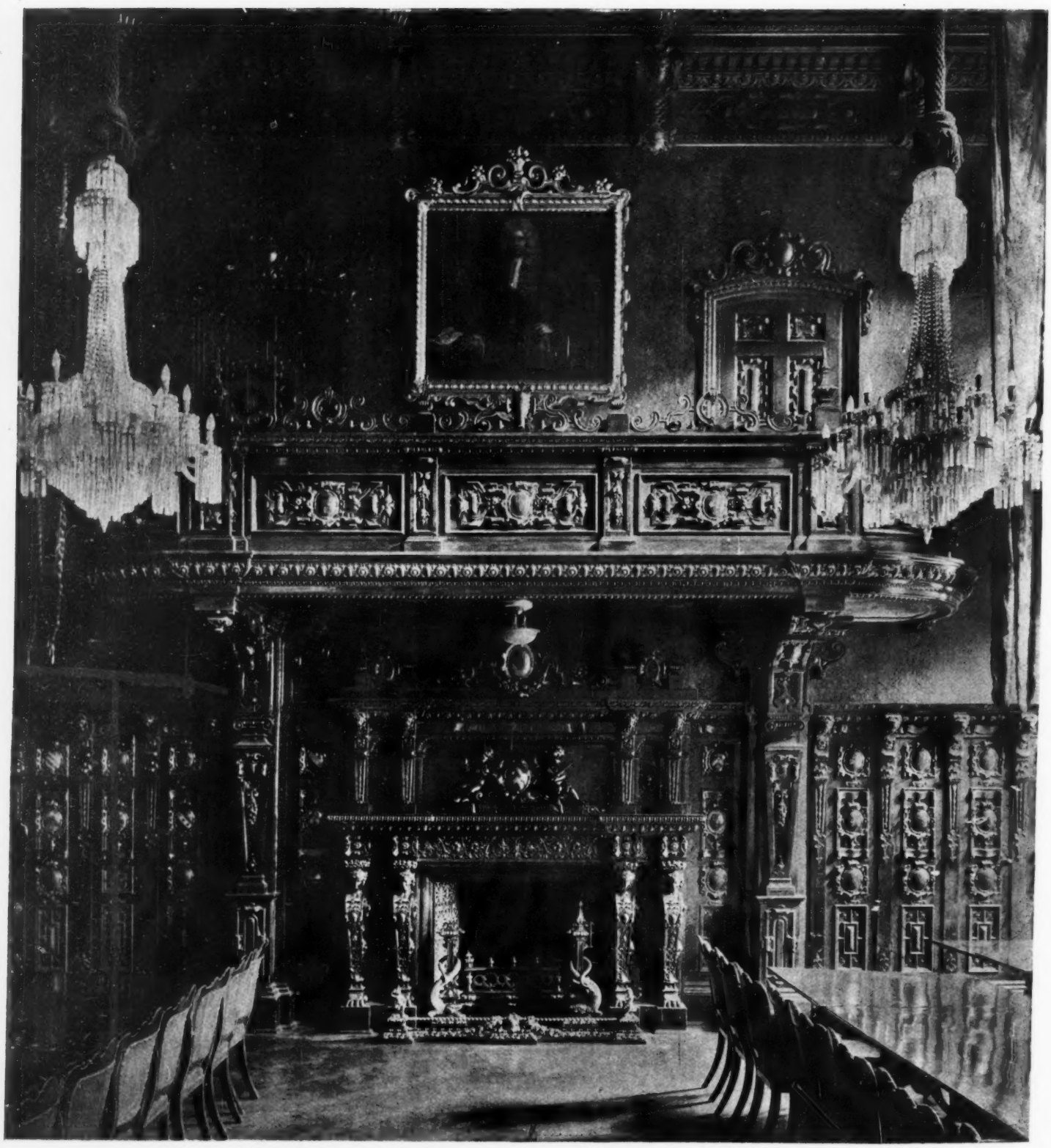




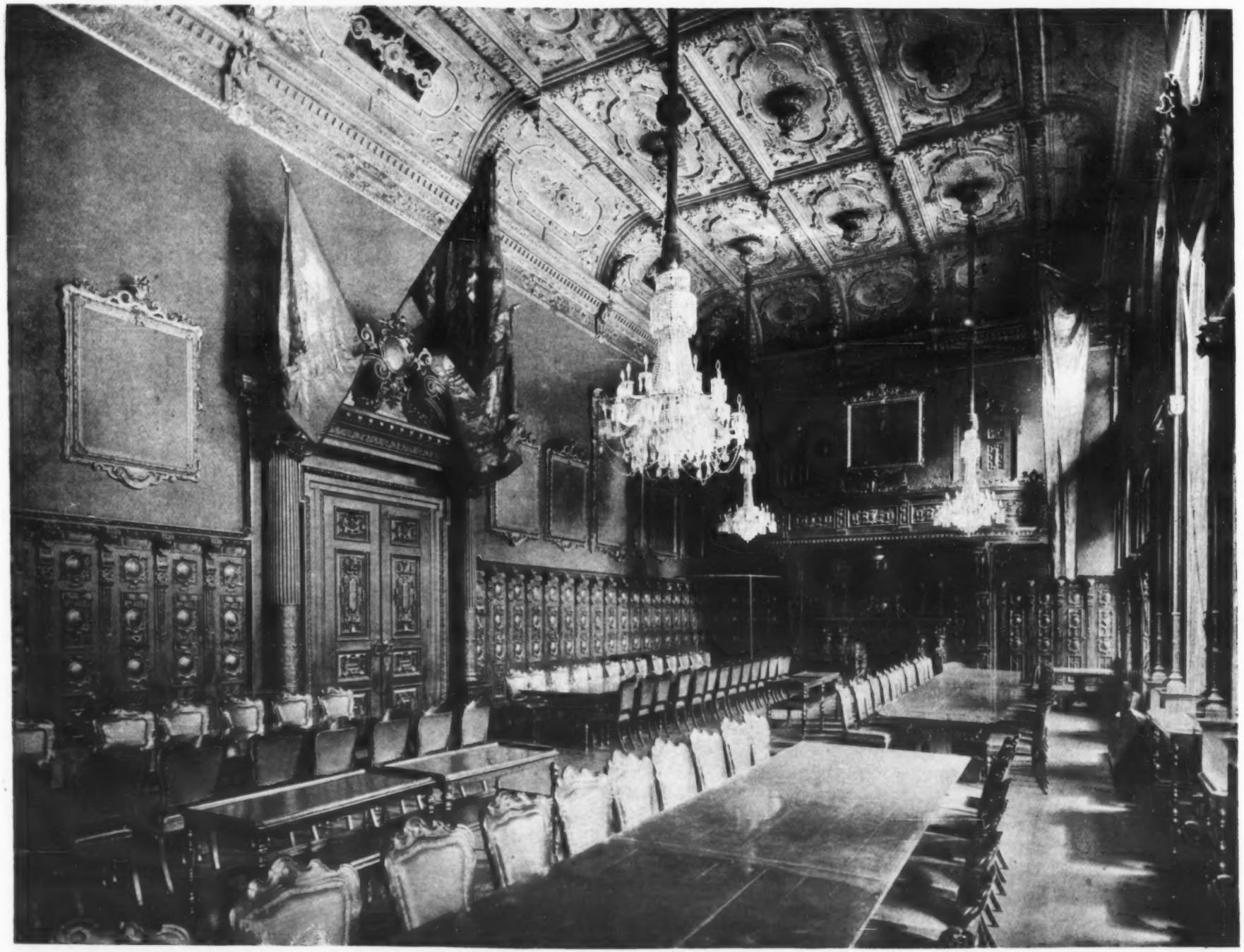
IRONMONGERS' HALL: PLANS.

IRONMONGERS' HALL: THE DRAWING-ROOM.

IRONMONGERS' HALL: ENTRANCE HALL.



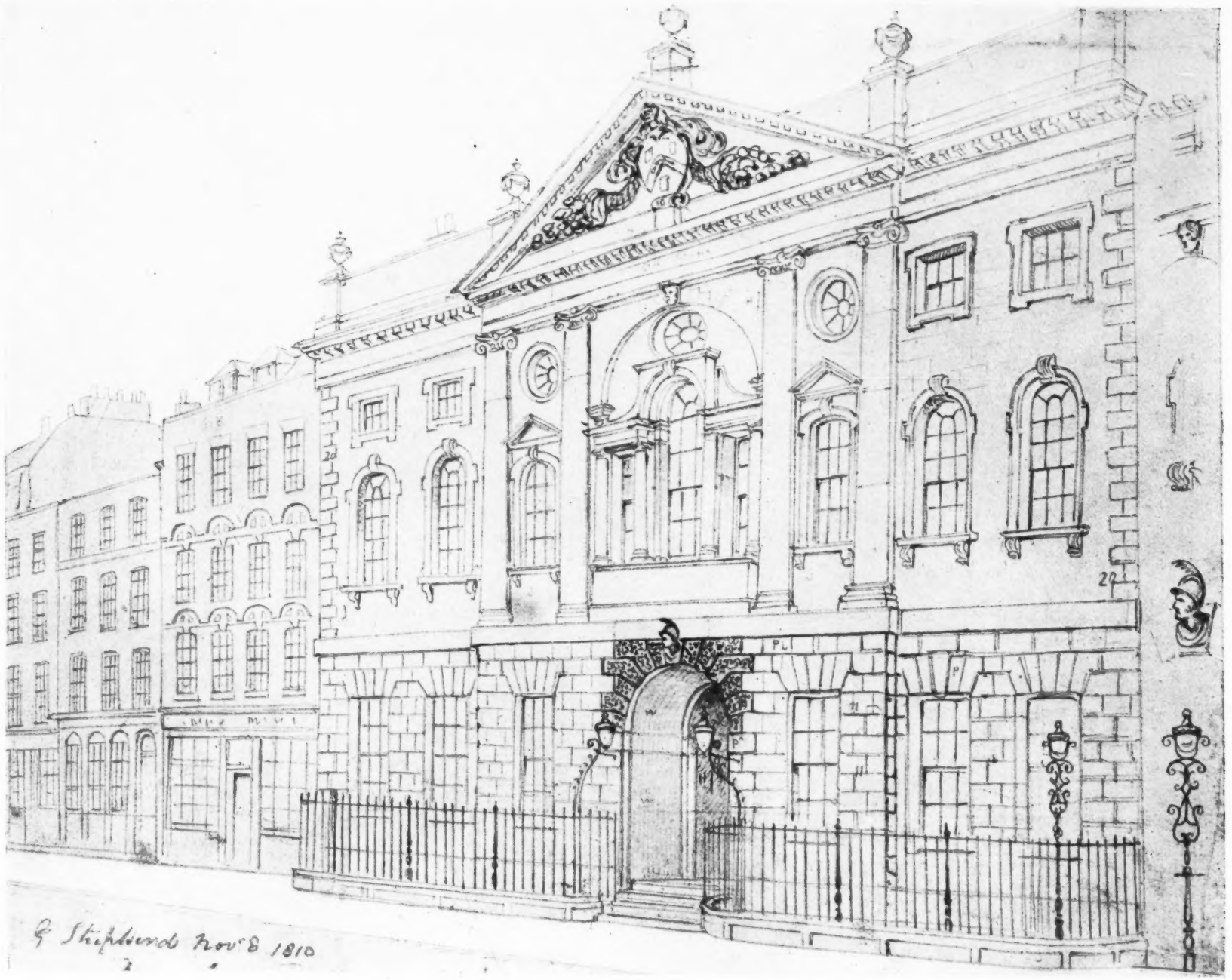
IRONMONGERS' HALL: DETAIL OF LIVERY HALL.



IRONMONGERS' HALL: THE LIVERY HALL.

IRONMONGERS' HALL: THE STAIRCASE.

IRONMONGERS' HALL: THE COURTYARD.



IRONMONGERS' HALL: OLD VIEW FROM THE CRACE COLLECTION.

.. The .. City Companies and Their Halls.*

No. 9. The Ironmongers' Company.

THE development of civilisation has been marked by the progress made in fashioning implements and weapons out of hard and intractable materials. To the Stone and Bronze Ages of prehistoric and historic times succeeded the Iron Age in which we live, and the gradual advance of European civilisation through nineteen centuries has been marked by discoveries and improvements in the methods of extracting and working iron.

Iron was used by the Romans at the time of their occupation of Britain, and the Forest of Dean in Gloucestershire appears to have been one of the earliest ironfields worked. The metal was also brought to the London markets from the wealds of Sussex, Surrey, and Kent, which only lost their position as iron-producing centres two hundred years ago, when improved methods made it more remunerative to work the deposits of Staffordshire, Shropshire, and the North of England.

It was natural that in the Middle Ages the craft of iron-working should be connected with an important and influential guild, and that of the Ironmongers was evidently both influential and powerful long before the crafts sought and obtained charters of incorporation from the Plantagenet Kings. Iron must have reached an advanced stage of development at a very early period, for most of the changes which led to its more extended use are connected with discoveries of methods of cheaper production and working, and not improvements in the material obtained.

One of the earliest mentions of the craft occurs in the "Domesday Book," in which it is recorded that six smiths in Hereford paid 1d. each for the use of a forge, and, according to the *Liber Horn*, in 1300 complaint was made in the Chamber of London to the Court of Aldermen that the smiths of the weald and other merchants sent iron portions of cartwheels to London which were of shorter lengths than formerly, to the great loss and scandal of the whole trade.

It appears that at this date there were wardens or overseers of the craft who exercised several functions—one was called the *Ironmonger of the Bridge*, and probably superintended the unlading of ships on the Pool or wharves while two wardens in the market exercised control over matters of quality, measurement, and sales. These officials used a standard rod for the verification of the ironwork of cartwheels, two duplicates of which were kept by the Chamber. Among the eighteen adulterine guilds fined in 1180 are two designated as Guilds of Bridge, of which the Ironmongers were probably one and the Pursers, who were subsequently merged in the Leathersellers, the other; but there was a great difference in their relative importance, since the first was fined ten marks and the last one mark.

In 1348 the Ironmongers sent four "good people, the wisest and most sufficient," to represent them in the Common Council, and in 1376 they deputed an equal number, while in 1363 they contributed £6 18s. 4d. towards the cost of the French War. Towards the latter end of the fourteenth century the guilds obtained a principal share of the electoral power and returned most of the officers of the City. In a petition to the King in 1402 the Ironmongers rank ninth among twenty-seven guilds. In 1404 an Act was passed prohibiting the sale of locks, rings, and other iron articles if gilded. These and other entries show that the craft held an important position among others, but they did not obtain their first charter until 1463, in the reign of Edward IV.

This charter contained the usual provisions, but it is worthy of note that the Company was largely governed by by-laws of an anterior date, namely, the articles granted in 1455, under which code it was enacted that thirteen persons besides the wardens should form a quorum, the yeomanry should pay their quarterage four times a year, persons nominated stewards should be fined £10 for refusal to serve, and the wardens should examine weights and measures; also that the Liverymen should pay 6s. 8d. for their pattern and wear such decent apparel as the wardens might approve.

In 1544 the Company's plate was pledged to meet the expense of providing fourteen men in harness for the King s Army in France. Of these four were to be bowmen and ten billmen, and they were to have doublets, coats, and hats of blue and red "after the Duke of Norfolk's facyon." Edward VI. conferred the chantry lands to the City and Companies for £18,744 11s. 2d., Augustine Hinde, Richard Turke, and William Blackwell receiving the royal grant of the lands subsequently associated with the various Companies.

In a book of Orders belonging to the Ironmongers an Act of Common Council of 1556 is cited for the prevention of early marriages. It was enacted that no one should be made free of the City by reason of apprenticeship or redemption till he had attained the age of twenty-four, and apprenticeship was not to be terminable earlier than that age, the object being to put an end to the misery arising from the marriage of impecunious and partially-trained persons.

In 1558 the Company advanced the sum of £666 13s. 4d. to the Crown for the French War, and in the following year they sent forty-two men in armour to the May game at Greenwich, from which date onwards the records contain numerous entries which show how constantly the Company were forced to contribute to the needs of successive monarchs and governments in both men and money, the so-called "loans" being seldom repaid to them.

The working of iron was looked upon with disfavour because it necessitated the cutting-down of timber for fuel; and in the first year of Elizabeth's reign an Act was passed to prevent the cutting of timber for ironworking within fourteen miles of the sea except in the weald of Kent and Sussex and in parts of Surrey.

In 1565 the Company were required to pay £75 10s. towards the cost of the new "Burse," and in 1566 a further £30 was needed for the same purpose. They also paid £20 in 1569 towards the cost of "clensing and skowryng the Citty Ditch between the Posterne and Aldgate." In 1569 the Court were ordered to provide twenty-eight soldiers for service in the North, and five years later they had to equip fifty-seven men for the Queen's service at Greenwich. In 1573 an Act of Common Council was passed prohibiting all feasts and dinners at the public halls in consideration of the prevalent scarcity, and the Company were assessed £187 10s. to be spent in the provision of corn.

The records of requisitions for the public service are very numerous. In 1575 £50 was provided as a "loan" to the Queen. In the following year the City was to "receive" £140,000 for service of the State, the interest not to exceed 7 per cent., and each Company had to state what proportion they could contribute. In 1577 a precept was issued for the provision and equipment of 100 men, and two years later the Company had to provide 110 men out of 3,000 required from the City for the Queen s service. In 1580 fifteen soldiers were demanded for service in Ireland, and shortly afterwards another sixty-five men were demanded for other military services. Many further contributions of men and money were demanded from the Company, culminating in Charles I.'s demand for £200,000 from the City of London, part of which was actually extorted from the Companies impoverished through continual impositions and the troubled political state of the country. When the Parliament became dominant the City was again pressed for money, and had to show cause why the balance of the £200,000 demanded by the King was not forthcoming. The Ironmongers, being asked in 1643 why they had not provided their quota of the amount demanded, pleaded incapacity, but the Parliamentary Committee answered "that the Company's part of the last £50,000 was to be raised for the preserving of their libertyes, their lives, and the Gospell of Jesus Christ, w^{ch} was more deare than all the reste."

* The following articles on the City Companies have already appeared in our pages:—The Mercers' Company, March 31; the Grocers' Company, April 28; the Drapers' Company, May 12; the Goldsmiths' Company, June 9; the Skinners' Company, July 14; the Merchant Taylors' Company, August 4; the Haberdashers' Company, September 1; and the Salters' Company, October 6. We shall give the Fishmongers' Company at a subsequent date.

When it is considered that besides these exactions, the total of which unquestionably amounted to far more than could be expected from the Companies on any equitable basis, they had to provide money for the purchase of the Irish plantations for the relief of the distress of Protestants in Ireland, for the purchase of corn for the public, as well as for what would be now called ordinary municipal services, the extent of the financial burdens laid on the City and its guilds can hardly be over-stated.

The guild suffered with the City by the arbitrary measures taken against their liberties after the Restoration, and were reinstated in their former rights and privileges on the accession of William and Mary, but, in common with other bodies in the City, suffered by the consequences of the Great Fire of 1666, from the effects of which London was slow to recover.

Meanwhile the staple industry with which the guild were connected had a chequered history. In the time of Charles II. most of the iron used in the country was imported from abroad. In 1619 Dud Dudley discovered how to use coal in the manufacture of iron, which he was able to produce at a cost of £12 a ton. But his works near Cradley were destroyed by a flood, further damage being done by the hostility of the workers, and it was not until 1713 that the forgotten process was rediscovered. In 1740 only 17,300 tons were produced, though formerly the annual output had amounted to 180,000 tons. In 1796 iron ceased to be extracted in Kent, but at Coalbrookdale coal was probably used as early as 1713, and certainly in 1747. The Reverberatory furnace was patented by Cranege in 1766, and the puddling process by Peter Onions at Merthyr in 1783, after which date the production of iron was enormously increased, and this country held a supremacy in the production of the metal until it was outdistanced by the United States and Germany late in the last century.

Records show that the craft suffered from foreign competition as early as 1622, when it was enacted that no foreign ironmongery could be sold except in Leadenhall. In 1636 a Court was held to consider a petition which had been addressed to the King concerning the "greate deceate in the making of bad and slight nails of all sorts committed by whole saile men who employ poor smiths to make the nails deceitfully in weight and substance." Complaint was also made against the locksmiths for "making false locks w^{h}out any wards or full wards in them, though the keys doe show severall wards to be in the locke." The petitioners prayed for a grant empowering them to examine and fine those in default, and the Company were summoned to appear before the Privy Council in 1640, but there is no record of any action being taken in the matter.

Many well-known men have belonged to the Company, and among their number are William Dykeman, who served the office of sheriff in 1368 and was the first ironmonger to fill that post. Sir Richard Marlow, citizen and ironmonger, was mayor in 1410 and 1417. In 1442 Sir John Hatherley, another member of the Company, was mayor. Other members of the Company holding office were Sir Christopher Draper in 1566, Sir Thomas Campbell in 1609, and his son, Sir James Campbell, in 1629. Among other eminent members may be mentioned Robert Byfield, a merchant of the Staple and sheriff in 1479; Richard Chamberlain, a Merchant Adventurer and member of the Muscovite Company, and also a sheriff, who was buried at St. Martin's, Ironmonger-lane, in 1562; William Beckford was an ironmonger, and served the mayoralty in 1763 and also in 1770; while the Master of the Company in 1769 was one John Shakespeare, Esq., alderman and ropemaker at Stepney, where his walks were long famous. He is said to trace his descent from William Shakespeare.

The ceremony of crowning the newly-elected wardens was a practice of the Company, but the custom has fallen into desuetude. The Ironmongers' Company possess a funeral pall which was used at the obsequies of their members, and is among the finest existing examples which remain in the possession of the City Companies.

There are records of several civic pageants—a picturesque feature in former centuries—which took place on the occasion of the installation of a new mayor. One of these marked the installation of Sir Christopher Draper in 1566, but no printed account of it remains. There is an entry in the books of the Company:—"Paid to the printer for printing poses, speeches, and songs that were spoken and songe by the children of ye pagent Vs." The pageant held on the installation of Sir Thomas Campbell in 1609 was entitled "Camp-bell; or the Ironmongers' Fair Field." Another is thus described: "Sueto Thriambos; or Steel and Iron triumphing: Applauding the advancement of Sir Sebastian Harvey Knight to the Dignity of Lord Mayor of London." It was performed "in hearty love to him, and at the charges of his kind brethren the Right Worshipful Company of Ironmongers." In 1629, when Sir John Campbell was installed, the pageant was also performed "at the sole cost and liberall charges" of the Company, and represented "London's Tempe; or the Feild of Happiness. In which Feild are planted several Trees of Magnificence, State and Beauty, to celebrate the Solemnity of the Right Honourable James Campebell at his Inauguration." Two other pageants in 1635 and 1685 were entitled "Londini Sinus Salutis; or London's Harbour of Health and Happiness," and "London's Annual Triumph." It is recorded that the former cost £180 to produce. Besides such ceremonials, which were undertaken to do honour to the mayor-elect and the Company he belonged to, the guilds were expected to contribute their quota both in men and money on the occasion of a royal progress through London. The functions discharged by the different Companies were very varied. First, they acted as associations of people bound together for the fulfilment of charitable and religious offices; secondly, they regulated and protected the interests of the crafts they represented; thirdly, they were called to perform services of a municipal character; fourthly, their funds were regarded as accumulations of wealth to which Government had recourse in times of stress, and also called on them to provide men and munitions for the service of the country; and finally, they were expected to provide the pageantry which our ancestors delighted to use on notable occasions.

It is a proof of their vitality and power to accommodate themselves to altered conditions that they contribute so large and important a share to the cause of modern education and benevolence—a share which was amply acknowledged in the Report of the Royal Commission held in 1880, in which no fault could be found in their administration of the trusts and obligations committed to them.

The oldest seat of the Ironmongers is supposed to have been the locality adjacent to Ironmonger-lane in Cheapside, and members of the guild were usually buried in the adjacent churches of St. Olave and St. Martin, Ironmonger-lane. In this district they sold bar iron and iron rods, and had shops for manufactured goods. Subsequently the locality they frequented was removed to the neighbourhood of the river, where ample accommodation and greater facilities could be obtained. In 1344 a grant was made to Richard Attemarke of a vacant plot of land surrounded by tenements with a part of a gate and solar built over it, opposite the end of the highway of Aldgate-street in the parish of All Saints' Staining. This property passed through several hands alternately, being sold under the will of Alice Stiuard to Richard Fleming and others, citizens and ironmongers of London; and soon after the purchase the premises were repaired out of corporate funds, but they seem to have been a chronic source of expense.

Ironmongers' Hall in Tudor times occupied the whole area between Fenchurch and Leadenhall street, with the exception of a few tenements fronting on the former, and was entered from Leadenhall-street by a gatehouse with a solar over. It was quadrangular, containing a large refectory, a Court chamber, a stone parlour, a parlour and a counting-house, a great and little garret, buttery, larder, and armoury. In the counting-house books were kept and oaths administered, and the little garret was used as a chaplain's room.

In 1578 the Company determined to build a new Hall, which was completed in 1587 at a cost of nearly £600. It does not seem to have encroached on the garden, which was kept with great care, the gardener receiving 8d. a day as wages; but the Hall seems to have had its frontage on the south or Fenchurch side of the site, as at present. Sir Christopher Draper, who was mayor in 1566, gave the site on which this Hall was built. In 1556 the Company possessed an armoury, which was an important feature of their building, and an armourer was employed at a wage of 20s. per year to keep the weapons in condition.

The Great Fire of 1666, which destroyed so large a portion of Old London, stopped just westward of a line drawn along the western side of Leaden Hall and the site of Ironmongers' Hall; but, though the Company's premises were not burnt down, entries prove that from time to time they needed a considerable amount of repair, and in 1745 it was decided to demolish them and build a new Hall. Though the Companies occupied an important position in the civic life, the continual drain on their resources was such that few of their mediæval Halls were either expensive or elaborate structures, and the frequent custom of adapting existing buildings as far as possible for their requirements, coupled with want of means, militated against the construction of monumental buildings likely to withstand fires and other destructive accidents.

We learn that in 1745 several plans for rebuilding were balloted for, and those of Mr. Holden were finally chosen, the present Hall being built at a cost of about £5,000. This building, though not possessing the antiquity of some of the homes of the guilds, forms a particularly interesting and picturesque group of buildings, the columned entrance hall being its most outstanding feature. The inner courtyard is a good and simple example of the work of the period, though marred by the construction of an overhanging corridor to give access from the main staircase to the drawing-room. The drawing-room, which was enlarged in 1850 by the addition of curved ends, is a fine room, and though the work carried out by Mr. Beckford, who decorated the Livery Hall in the "Elizabethan manner" at that time, is out of keeping with the type of the original structure, the work is good and pleasing of its kind. If it conveys a somewhat spurious impression of antiquity, the conceit is well carried out, and much of the detail is both well considered and characteristic, the design of the ceiling being distinctly happy.

The staircase and Court-rooms are well and quietly designed, and better taste has been displayed in furnishing the building than is shown in many of the other homes of the guilds. The front to Fenchurch-street, though not of outstanding merit, is a piece of dignified and quietly-conceived design, and it must be hoped that Ironmongers' Hall will not be remodelled or destroyed to facilitate any improvement scheme. There is a unity about the whole of the buildings which is satisfactory, and, though little of the work is of the highest merit, its general character is better than that of most of the other City Halls.

The arms of the Company were granted by Lancaster Herald in 1456, and were described as—

> A chevron gules, set between three gads of steel, azure, on the chevron three swivelles of gold, with two lizards proper encooped with gules on the helmet.

The motto was until recently "Assher Dure" (Acier Dur), now replaced by "God is Our Strength." Their Irish estate was known as the "Manor of the Lizard," just as that of the Skinners was known as the "Manor of Pellipar."

In 1502 the Livery is given as 25, in 1524 the Yeomanry are returned at 56, and in 1537 the Freemen householders numbered 59. The official lists of 1699 and 1724 give the number of the Livery as 100 and 109. In 1882 the Freemen numbered 156 and the Livery 52. The Company differ from all others in one particular, which is that every Liveryman is a member of the Court of Assistants.

Among the charities administered by the Company are those founded under the following wills:—William Chapman and Margaret Dane, in 1579; Thomas Hallwood, in 1622; Robert Geffery (who was twice Master of the Company

and Lord Mayor of London), in 1673; Thomas Betton, in 1723; and Thomas Hanby, in 1782.

The Wiliam Chapman Charity was for the maintenance of two poor scholars to study Divinity at Oriel College, Oxford, until they attain the age of thirty years, after which others were to be appointed. The testator also left a smaller benefaction for the assistance of twenty-four poor householders at Cookham.

Margaret Dane gave £2,000 to the Company, directing them to pay, out of the interest accruing, Christ's Hospital, £10; two scholars at Oxford and Cambridge, £10; and Bishop's Stortford School, £5.

Thomas Hallwood's Charity was to provide for the payment of £2 to the wardens from the residue of the rents and profits; £4 each to four poor scholars of Divinity at Oxford and Cambridge for three years each. The amount of the bequest was £400, but the exhibitions have been largely increased by the Company out of their corporate funds.

The sum of £520 was bequeathed by Sir R. Geffery to be laid out in the purchase of lands or houses, out of the rents of which 2s. a week was to be used in purchasing bread for the poor inhabitants of Landrake and St. Erney, Cornwall, the bread being distributed "in the forenoon after Divine Service." The residue of the rents was to be paid to "the schoolmaster of Landrake or whoever should teach the children of Landrake and St. Erney to read and write in English and learn the Catechism of the Church." These payments were made till 1877, when a scheme was approved for the administration of the fund under the Endowed Schools Act, and a school for 150 and a master's house were erected on a site by the Earl of Mount Edgcumbe.

The testator bequeathed the rest of his estate to the Ironmongers to provide for an almshouse in or near the City of London; the almoners were to receive £6 a year each and 15s. a year for a gown. Two acres were accordingly purchased in St. Leonard's, Shoreditch, in 1712, and fourteen four-roomed houses and a chapel erected. The neighbourhood becoming unsuitable, the houses and grounds were sold in 1911 and new almshouses erected at Eltham to accommodate a matron and forty pensioners.

The most important of the Company's charities, that created under the provisions of Thomas Betton's will, was given for three main purposes—the redemption of British slaves in Turkey and Barbary, the assistance of charity schools in the City and suburbs of London in which the education given is according to the tenets of the Church of England, while the remainder was to be used for the payment of £10 a year to "such minister of the Church of England as they shall from time to time entertain in their hospital," and for the relief of decayed and necessitous freemen of the Company, their wives, and their children. After the capture of Algiers the object of the first portion of the testator's bequest was eliminated, and finally a scheme was drawn up in 1845 which determined the way in which the funds should be administered in assisting schools. The income at the present time amounts to about £8,000.

Under the will of Thomas Hanby £2,000 was given to Christ's Hospital on condition that the Hospital should clothe and educate two sons of freemen of the Company.

The Ironmongers also contribute largely to the support of the City and Guilds of London Institute for the advancement of technical education.

MR. A. MILLWOOD.

The death, on October 16, at his residence, No. 52, Madrid-road, Barnes, is announced of Mr. Alfred Millwood, aged sixty-eight years. Mr. Millwood was elected an Associate of the Royal Institute of British Architects in 1881.

LIEUTENANT G. C. VERNON-INKPEN.

We regret to announce the death of Lieutenant G. C. Vernon-Inkpen, only son of Mr. G. C. Vernon-Inkpen, architect and surveyor, of 40, Commercial-road, Portsmouth, who was killed by the fall of an aeroplane when flying on Saturday last.

LAW REPORT.

Builders and the Ministry of Munitions: Reasoned Judgment in the Test Case of Messrs. Dick, Kerr, & Co. and the Metropolitan Water Board—Important Points.

IN the King's Bench Division on Wednesday, October 18, Mr. Justice Bray delivered his reasoned judgment in this important test case, in which the question was raised as to whether a contract entered into by Messrs. Dick, Kerr, & Co. to build reservoirs for the Metropolitan Water Board was ended by the action of the Ministry of Munitions under the Defence of the Realm regulations in ordering the contractors to cease work and yield up the plant.

This case had been before his Lordship in the last legal term (as reported in the *Builder*), and Mr. Justice Bray had announced a short decision to the effect that, in his opinion, the events that had happened had not had the effect in law of terminating the contract, and thereby upholding the contention of the building owners, the Metropolitan Water Board, for whom he gave judgment.

The case is of great importance because it is the first of its kind and bears on the position of contractors in relation to owners when the power vested with the Ministry of Munitions is exercised.

Mr. Justice Bray, in his reasoned judgment, said that the Metropolitan Water Board sued Messrs. Dick, Kerr, & Co.—a firm of contractors—for a declaration that a contract of February, 1914, that Messrs. Dick, Kerr, & Co. had entered into for the erection of two reservoirs near the Thames was still in existence and fully binding upon the contractors. The plaintiffs also claimed a declaration that they were entitled to the proceeds of the sale of plant that formerly existed at the site, and they asked for an injunction to restrain the removal of plant. The defendants relied on an official notice from the Ministry of Munitions requiring them forthwith to cease work on the contract, and they said that by reason of that notice the performance of the contract as originally entered into became impossible, and the contract consequently ceased to exist as a binding contract. It appeared that this contract was for the erection of two reservoirs on the banks of the River Thames, and the work involved the evacuation of a very big area. The contract was for a sum of about £673,000. There was a variation of the original contract in August, 1913, a sort of supplemental contract by which instead of two reservoirs it was decided to build one. By this supplemental contract the prices were revised somewhat in favour of the contractors, who had already spent considerable sums incidental to the work. The notice from the Ministry of Munitions stated that it was necessary that the work that Messrs. Dick, Kerr, & Co. were doing for the Metropolitan Water Board should be restricted, as the services of the workmen were required elsewhere, and the plant would also have to be moved with a view to its being used for the production of munitions. It was ordered that the contractors should accordingly cease the work on the contract with the Metropolitan Water Board. The work ceased on July 26, and under the instructions of Sir John Hunter, who acted for the Ministry of Munitions, the defendants removed large quantities of plant. Then the defendants set up the contention that the contract had been determined, as its performance had become impossible, and this action eventually ensued. It appeared that the contract was to have been completed within a period of about six years, but there was a proviso giving power to the engineer to grant extension if in his opinion circumstances made such a course of conduct reasonable.

The first question that arose in the case was whether the events that had happened here, involving the interference of the Ministry of Munitions, justified the contractors in saying that the contract was at an end. The real questions were whether the delay that had occurred rendered the performance of the contract impossible, and whether by reason of what had occurred the objects of the contract had been frustrated or its performance had been made conceivably impracticable. It was agreed before him that the length of the war was a very uncertain matter, but he could not conceive that the object of the contract was frustrated by delay, as if the plaintiffs got their reservoirs they achieved their object. It seemed to him the contract really provided for and contemplated delays such as this; there might be a long strike that would be equivalent to such a delay as was now being experienced. He had no doubt that in consequence of the events that had occurred most of the work that had been done on the building site would have to be done again; but even that would happen in the case of a long strike, and the engineer had powers to extend the time if there was delay by causes of this nature. He could not hold, therefore, that the work contemplated by the contract was physically impossible.

Now, could it be said that the carrying out of the object of the contract was commercially impracticable? There would undoubtedly be very serious delay, and Messrs. Dick, Kerr, & Co. would suffer losses in money if they were not compensated by the Government; but in some ways, having regard to the labour market, the contractors would have been benefited by this compulsory stoppage, as the state of the labour market would improve at the end of the war. The firm would suffer loss incidental to the dismantling and removing of the plant, and it was true that the Government were not bound to give compensation for loss the contractors might have sustained in the stoppage, but Sir J. Hunter had said that he presumed a claim, if it was thought right, would be paid. He (the Judge) could not conceive that there would not be compensations for the contractors. There would be losses, but as to the amounts the defendants had not called any evidence, and he was not able to calculate it. In his judgment it could not be said that there would be any such losses as would make the completion commercially impracticable, and if there was a proviso as to this to be read into the contract he could not say that the defendants had brought themselves within the terms of it. He therefore made a declaration that this contract was not determined.

Now, in regard to the plant it appeared that all property brought on to the site was vested in the plaintiffs until the completion of the works if the contract was still in existence, but the question was whether the plaintiffs were entitled to the proceeds of the sale of the plant that had been removed by the defendants under the order of the Ministry of Munitions. There was no possible doubt that the defendants had removed or sold plant to the value of about £50,000, and that they had received substantial sums as proceeds of the sale, but defendants said that in doing this they were acting on the instructions of the Ministry of Munitions, and he had come to the conclusion that the defendants did so act and that the goods were removed and sold upon the authorisation of the Ministry of Munitions. He thought the regulations gave the Ministry of Munitions complete control, and that they had power to sell the property through the medium of the defendants, and he held therefore that Messrs. Dick, Kerr, & Co. could not be held liable to pay the proceeds of the sale to the plaintiffs, nor to pay damages for removal of plant in so far as they acted as agents for the Ministry of Munitions. But he thought that, in so far as the defendants claimed the right to remove plant apart from the instructions of the Ministry of Munitions, the plaintiffs were entitled to a limited injunction, and he made an order accordingly.

The judgment therefore would be, as already recorded, for the plaintiffs, with costs, except so far as the costs were increased by the plaintiffs having made a claim for the proceeds of the sales of plant and material.

[***Several other law reports are held over until next week.—ED.]

CAPTAIN E. G. FELLOWES PRYNNE.

We regret to announce that Captain Fdgar George Fellowes Prynne, Royal Fusiliers, attached London Regiment, was killed in action on September 16, aged twenty-six years. Captain Fellowes Prynne was the second son of Mr. G. H. Fellowes Prynne, F.R.I.B.A., and Mrs. G. H. Fellowes Prynne, of "The Gables," Grange-road, Ealing. He was educated at Ripley Court, St. Edward's School, Oxford, and Selwyn College, Cambridge. Having graduated B.A. in July, 1914, he in August of that year joined the Army from the Cambridge University O.T.C. His commanding officer writes of him:—"He was one of the best, straightest, and most gallant fellows I have ever known. . . . He was one of the best company commanders I have ever had. . . . He led his men magnificently in that attack, and they would have followed him anywhere. . . . I have never met a better man. You must be very proud of him."

THE BUILDING TRADE.

THE HOUSING PROBLEM, BIRMINGHAM.

MR. H. M. GRANT, King's Norton, in an address to the Birmingham Rotary Club, referred at some length to the housing problem. He said there was dire need to-day in Birmingham for 14,000 additional houses. So acute had the demand become that in many cases 50s. was vainly offered for the key of a 6s. 6d. house, and he knew of one case where an offer of £5 was made by an individual who desired to secure a house for his gardener. Surely it was a scathing indictment of what was known as the People's Budget that while in the ten years prior to its introduction over 1,113,000 houses were built, in the four succeeding years only 312,000 were erected, a falling off of 33,300 a year. House building had in many districts virtually ceased; it was doubtful whether more than 30 per cent. of the houses absolutely required had been built since the revaluation scheme provisions of the People's Budget came into force. "I do not say this as a politician," said Mr. Grant; "I say it as a builder." Since the war commenced the position had become more acute. The reason was twofold. First, the Government placed restrictions on building operations; secondly, inasmuch as building, like everything else, depended upon the law of supply and demand, and must of necessity depend upon prime cost, if people were to build, they must consider the increased cost of production and what they would realise for the property when built. But the Government had said, "We will not recognise even the increased cost of repairing the dwellings that now exist. We will simply consider things as they were before the war, and tell landlords that they shall not increase the rents." What were the ways out? After very careful consideration he would answer unhesitatingly, building by private individuals assisted by the State in regard to the loan of money at a cheap rate; or municipal building; or State building. The State could not do the work. There never had been a case of any public provision of houses for the people who most needed them but that those houses had cast a burden on the public. He was convinced the most expensive building was by the State; the next by the municipality; and, lastly, by unassisted private enterprise. Mr. Grant cited the figures presented in connection with a projected municipal building scheme by the Smethwick Council. These showed that one type of house, with three bedrooms, built nineteen to the acre, would cost £200, with £31 for the land and £15 for fences; in other words, £246 a house. It could not be let at less than 10s. 6d. a week. If the average builder could get that price for such a house and be sure of a market, he would build in the sure and certain hope of finishing up a millionaire. The problem could only be solved by the Government ceasing to hit at the most powerful and yet the most helpless body of men, landlords, and making it easy instead of difficult to provide healthy homes for the people. He feared the shortage of houses must continue and that rents might be higher after the war.

BUILDING WORKS, SPAIN.

The *Gaceta de Madrid* of October 5 notifies that tenders will be received, within a period of thirty days from that date, at the "Casas Consistoriales," Jérica, for the erection of school buildings at that town at an estimated cost of 87,342 pesetas (about £3,700 at current rate of exchange). A period of eighteen months will be allowed for carrying out the works. Although the foregoing contract will probably be awarded to a Spanish firm, nevertheless the carrying out of the works may involve the purchase of some accessories and equipment outside Spain.

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

IN these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

Aberdeen.—Six sets of plans (mostly business premises), representing a cost of £4,000, have been submitted to the T.C.

Abram.—The D.C. has approved a plan presented by Mrs. Bromilow for the erection of two dwelling-houses at Plank-lane.

Aird.—A scheme is in contemplation for the development of The Aird, a stretch of waste ground lying between the Nevis and Lochy. It is understood that the proposal is to erect a large factory with relative blocks of workmen's houses.

Barnes.—The D.C. has granted an application from Messrs. Lennarts & Dolphins for permission to erect a temporary refreshment canteen at their works in Beverley-path.

Bedford.—Plans passed by the T.C.:—New lavatories to dynamo shop, Queen's Engineering Works, for Messrs. W. H. Allen, Son, & Co., Ltd.; water-closets, Lynton Works, for Messrs. W. H. A. Robertson & Co., Ltd.; cover for hay-stack, Winifred-road, for Mr. R. Jeakings; extensions to shed, 62A, George-street, for Mr. Hull; temporary store shed, Castle-road, for Mr. Rogers; temporary motor store, 41, Kimbolton-road, for Mr. Henn.

Berkhamsted.—Plans approved: Washhouse at Gossoms End, for Mr. Wingfield; additions to "Rosemeath," Charles-street, for Mr. H. Jarvis; and shed at Whitehall, for Major Foot.

Bolton.—Plans passed:—Workshop, Power-street, for J. S. Haslam; sanitary alterations, Weston-street, for Winder & McKean, Ltd.; repair sheds, Manchester-road, for Bolton Railway Waggon Company; extension, Mortfield Bleachworks, for T. Cross & Co.; shed extension, High-street, for Grimshaw & Peers; extension to warehouse, Bow-street, for S. Kay; motor waggon shed, Chandos-street, for A. Bromley & Co.; motor garage, Costock Mills, Wm. Heeton & Sons.

Bradford.—The architect of the Board of Guardians has been instructed to prepare plans for covering the carriage yard to provide accommodation for five motor conveyances and two hearses.

Brighouse.—Plans approved:—Garage and sanitary improvements, St. John-street, for Mrs. Widdop; dining and recreation room, Woodhouse Iron Works, for J. Blakeborough & Sons; coal store and office extension, Rosemary Dyeworks, for Walshaw, Drake, and Co., Ltd.; sanitary improvements, Wilkin, Ray, & Mill, for Wood, Robinson, & Co.

Chelmsford.—Plans passed:—Power station, extension to grinding and hardening shop, sewers, etc., on site of Bishops Hall Works, New-street, for the Hoffman Manufacturing Company; lock-up shops, 218, Moulsham-street, for A. E. Bushall.

Cullen.—Plans passed:—Coal-shed and washing-house for George Gardiner, 15, Victoria-street; coal-shed for John Hay, 171, Seatown; and water-closet for Alexander Findlay, 36, Seatown.

Dublin.—The Housing Committee of Dublin Corporation has decided to accept the offer of Messrs. Lee, Higginson, & Co., Boston, of a loan of 2,000,000 dollars, to be devoted to housing schemes in Dublin.

Eastbourne.—Proposed works after the war:—Completion of the laying-out of the Gilbert Recreation Ground and construction of a model yacht pond, £5,000; the erection of ornamental shelters on Madeira-walk, £1,320; the laying-out of a music garden and erection of shelter at the Redoubt end of the Parade, £5,000; a scheme for providing on the sea front improved shelter accommodation and erection of new bandstand, shelters, etc., £10,000.

Ebbw Vale.—Plans passed:—Mr. Hy. Waters, architect, for the improving and additions to cottages at Beaufort; schoolroom for the Primitive Methodist Church at Steelworks; and for the conversion of the two cottages at the rear of the Salvation Army Hall into two class-rooms. The D.C. has decided to apply for a loan of £800 for the purpose of constructing a new fire-station and stores on the site of the old one.

Eton.—The R.D.C. has approved plans for the erection as a temporary building of a garage at Vine Cottage, Farnham Cottage, for Dr. Ironside Bruce.

Exeter.—The Corporation has decided to erect a chimney, 55 ft. high, at the rear of the boiler-house at the Workhouse.

Fylde.—A street plan, submitted by Mr. W. Lawson for Marton Park Estate, has been approved by the R.D.C.

Glasgow.—Linings granted by Glasgow Dean of Guild Court:—George M'Lellan & Co., india-rubber manufacturers, 135, Shuna-street, to erect additions to their works there; and Buttons Bros. & Co., crane builders, M'Lellan-street, Kinning Park, to make alterations and additions there.

Goole.—The U.D.C. has passed a plan for a workshop in Swinefleet-road for Mr. G. Dunham.

Grays.—The U.D.C. has agreed to the recommendation of the L.G.B. for the erection of fifty houses, or more if necessary, and has instructed the Housing and Town Planning Committee to make arrangements for such a scheme so that the Council would be prepared to commence building on the declaration of peace.

Greenwich.—The B.C. has approved the plans submitted by Messrs. Wm. Mills & Sons, Ltd., for the partial reconstruction of the drainage of the premises formerly occupied by the Thames Ironworks Company, Coldbeth-street, and for an addition to the drainage of the Britannia Works, Sigismund-street.

Halifax. — Plans passed:—Conversion of cottage, etc., Course-street, for Hartley & Sugden; test room and lavatory, Pellon-lane, for Wright & Wood; shed, Shroggs-road, for J. Crossley & Sons, Ltd.; sanitary alterations, Shroggs Wire Works, for J. Royston, Son, & Co., Ltd.; electric sub-station, Pellon New-road, for the Corporation; engineer's house and disinfector, Free School-lane, for the Governors of the Halifax Royal Infirmary; reroofing, etc., Victoria-street, East, for F. Pratt & Co., Ltd.

Hebden Bridge.—A friend connected with the Birchcliffe Baptist Church, Hebden Bridge, has promised to give £1,000 towards the erection of a new Sunday-school.

Lambeth.—The B.C. has agreed to the plan submitted by Mr. A. R. Westworth, on behalf of Mr. A. T. Adams, for the erection of arches, bay windows, etc., to nine houses on the eastern side of Porden-road.

Lepton.—The U.D.C. has approved the plan of an extension of the works of Messrs. Henry Shaw & Sons.

London.—The Westminster City Council has agreed to contribute a sum not exceeding £13,333 towards the cost of the Grosvenor-road embankment extension from Lambeth Bridge to Grosvenor Wharf. The scheme, involving an outlay of £80,000, provides for a widening of Horseferry-road to 60 ft. between St. John's-gardens and Grosvenor-road, and an improved western approach to a reconstructed Lambeth Bridge. The Y.M.C.A. is negotiating with the L.C.C. for the erection of a kiosk in Trafalgar-square for the purpose of establishing a bureau of information for the soldiers visiting the Metropolis.

Manchester.—The Paving and Highways Committee is submitting to the Corporation an estimate of £1,350 for the diversion of the sewer from under Messrs. Richard Johnson & Nephew's works in Benson-street.

Mirfield.—The D.C. has approved a plan for the erection of a warehouse for Mr. Lincoln Balmforth.

Neath.—The R.D.C. has agreed that the engineers prepare a housing and town-planning scheme for the district.

Newton Abbot.—The U.D.C. proposes erecting a public slaughter-house.

Northleach.—The R.D.C. has instructed Mr. E. Hampshire, sanitary inspector, to prepare plans and specifications for the conversion of the laundry into a block for diphtheria cases and another building used as a store to be fitted up as a laundry, and has decided to invite tenders for carrying out the work.

Norwich.—Works proposed to be carried out after the war:—(1) Extension of Municipal Offices; (2) the Starling-road housing scheme.

Ontario.—A hospital is to be built at London, Ontario, for the treatment of Canadian soldiers suffering from tuberculosis at a cost of about £10,000.

Ossett.—The T.C. has approved a plan of a porch to house in Healey-lane for Mr. Joe Smith.

Poplar.—The B.C. has assented to the following applications:—From Hammond & Miles, Ltd., building and drainage of three houses, for Fletcher, Son, & Fearnall, Ltd., Bridge-road; from H. Mills, building and drainage of new garage, for Spratts Patent, Ltd.

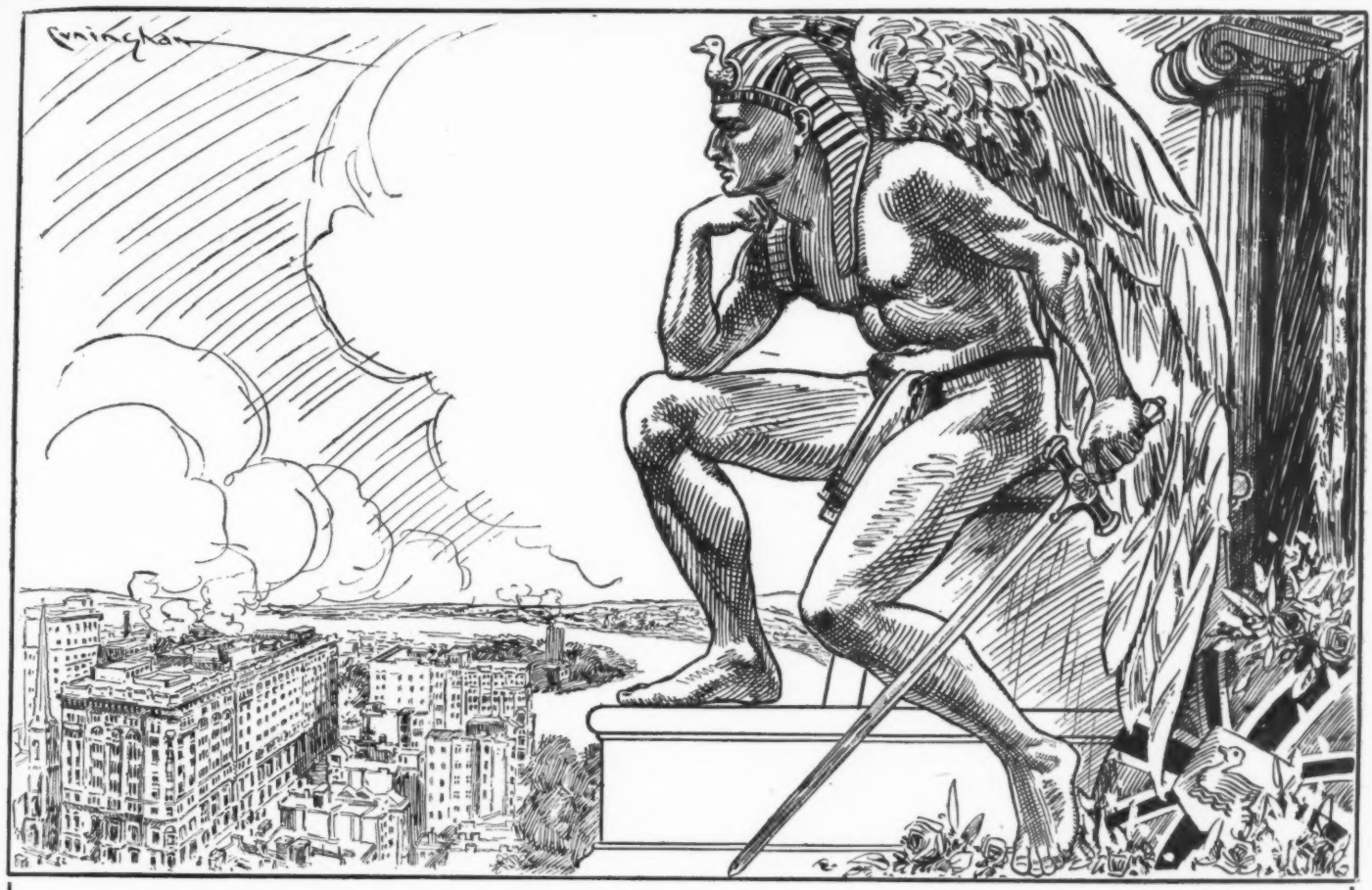
Preston.—Plans passed:—Cart-shed, Bootle-street, for N. B. Newton; additions, Alexandra Mill, Skeffington-road, for Wilding Bros., Ltd.; additions, St. Paul's-square, for Mr. W. D. Hartley.

Rotherham.—Proposed purchase of land for extensions at the Electricity Works.

Selby.—The U.D.C. has accepted the tender of Mr. Henry Ashton for the erection of twenty-two new houses in Kitchener-street.

Southend.—Plans passed by the T.C.: Conservatory and covered way, "St. Hilary," London-road, Leigh, G. F. Wiggins; coach-house

* See also our list of Competitions, Contracts, etc., on page 268.



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Belfast	Cardiff	Faringdon	Manchester	Orpington	Stevenage
Berwick	Chelmsford	Frome	Market Harboro'	Oxford	Torquay
Birmingham	Chesterfield	Hayward's Heath	Middlesbrough	Paignton	Warrington
Blackpool	Chorlton-cum-Hardy	Huddersfield	Narboro (Leicester)	Portree (Syke)	West Hartlepool
Bolton	Coventry	Hull	New Brighton	Plymouth	Wigan
Bournemouth	Derby	Huntingdon	Newcastle-on-Tyne	Preston	Winchester
Bradford	Draycott	Keyworth	Newport (Mon.)	Rotherham	Woolwich
Brighton	Dublin	Leicester	North Shields	Swansea	York
Bristol	Durham	Liverpool	Norwich		

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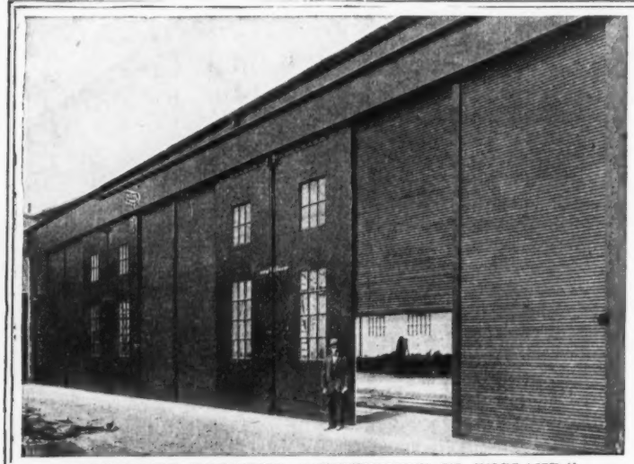

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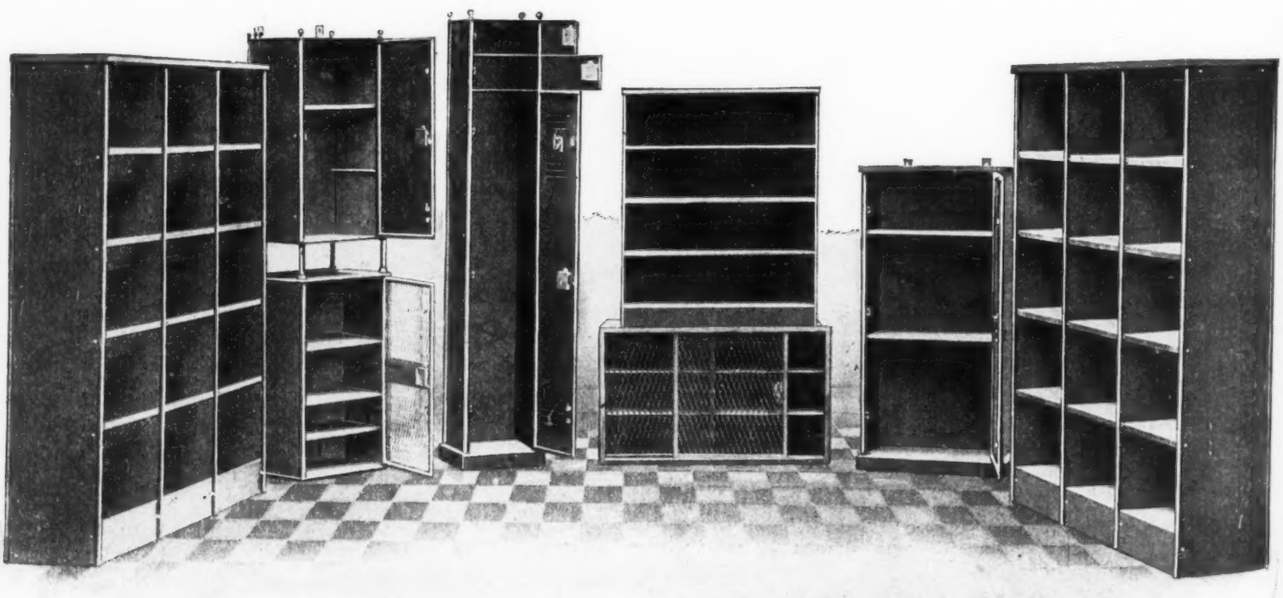

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and harness room, Picketts-road, G. Banfield; motor garage, "Glenfield," Tyrone-road, Victor Ellis; outside iron staircase, 144 and 146, High-street, Keddie & Sons; conversion of two houses into shop, 301 and 303, London-road, Willett & Retzbach; two bungalows, Southborough-drive, S. G. Rutherford; motor garage, Thorpe Bay-gardens, corner of the Broadway, C. Matthews; and motor garage, Beach-road, Eastern Esplanade, W. Bray.

South Stoneham.—The B.G. proposes after the war to repaint the outside of the House at an estimated cost of £250.

Spain.—Tenders will be received at the "Casas Consistoriales," Jérica, for the erection of school buildings at that town (estimated cost, about £3,700); construction of a new lighthouse at Cape Silleiro (province of Pontevedra) and a road of access thereto (estimated cost, about £6,700); the Duero Hydraulic Division to continue work on the principal channels of the Queen Victoria Eugenie Canal in the district of Aranda de Duero; the Southern Spain Hydraulic Division to continue the Andrade drainage works.

Stalybridge.—The Council has passed plans for a cotton room at Chapel-street Mill belonging to Messrs. T. A. Harrison & Co., Ltd.

Stoke.—The Guardians have agreed to the preparation of a scheme for the proposed sanatorium.

Ulverston.—The R.D.C. has passed plans of a new house at Pennybridge for Mr. John Dickinson, Bolton, and additions to house at Newby Bridge for Miss Bannister.

Walsall.—A scheme for the erection of 250 houses for the working classes is to be prepared by the Borough Surveyor.

Warsop.—Plans passed by the U.D.C.:—New Hucknall Colliery Company, 210 temporary buildings in Ridgeway-lane, Manvers-street, and Tichfield-street.

West Ham.—Plans passed:—Lavatory accommodation at Messrs. Yardley & Co.'s premises, Carpenters-road, Stratford, submitted by J. Hamilton & Son; store shed, Webster's Wharf, Bow Bridge, submitted by R. A. Jeck; lavatory accommodation, Silvertown, for J. Knight, Ltd.; stable and cart-shed, 93, Leytonstone-road, for H. Riches; alterations, Black Lion public-house, Plaistow, for H. I. Cundy; boiler-house, Gas Light Improvement Company's premises, Crows-road, submitted by Moore, Smith, & Durrant.

West Lancashire.—Plans passed by the Council:—Proposed pair of houses, Drummers-dale-lane, Scarisbrick, for Mr. J. Gregg; septic tank and new drainage, Hundred End, Hesketh Bank, for Mr. J. Wood; proposed wooden building at Barrow Nook, Bickerstaffe, for Mr. Pennington.

Weymouth.—The T.C. has approved plans, submitted by Mr. W. Sheppard for extension of cart shed, No. 22, South View-road, Westham, for Mr. Mintern, and plans, submitted by the Wilton Estate for proposed alterations and lock-up shops, etc., 56, 56A, and 57, St. Mary-street.

Yarmouth.—Plans approved:—Petrol store, Acle New-road, for Mr. Hammond; bay window, 39, Lancaster-road, for Mr. Chasteney.

GENERAL BUILDING NEWS.

NEW SESSIONS HOUSE, WELLINGBOROUGH.

The new Petty Sessional Court Buildings, erected in Midland-road, Wellingborough, by the Northants County Council, were opened recently. The work has been carried out under the direction of the County Surveyor.

TRADE NEWS.

We hear that the front of Hastings Pier entrance has recently been cemented, and as a safeguard against future dampness the powder "Pudlo" has been adopted.

The recreation-room, Levenshulme Auxiliary Hospital, Manchester, is being supplied with Shorland's patent Manchester stoves by Messrs. E. H. Shorland & Brother, Ltd., of Failsworth, Manchester.

The winter garden of the Regent Palace Hotel, London, W., is being redecorated with "Coatostone," manufactured by the Coatostone Decoration Company, 9A, Little James-street, Gray's Inn, London, W.C.

Boyle's latest patent "air-pump" ventilators, supplied by Messrs. Robert Boyle & Son, ventilating engineers, 64, Holborn-viaduct, E.C., have been employed by Messrs. Eley Bros., Ltd., for Angel-road Factory, Edmonton.

The restoration of the stonework of Winchester House, Old Broad-street, London, E.C., has been carried out by the Stone Preservation Company, Ltd., of 9A, Little James-street, London, W.C., under the direction and supervision of Mr. Ernest Flint, F.R.I.B.A.

Mr. Henry Hayward, builder, of Dulwich, S.E., who died on August 28, left estate value £16,069.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur:—

—	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters.	Masons' Labourers.	Bricklayers' Labourers.	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	9½	9½	9½	9½	9½	9	8	6½	6½	6½
Accrington	10	10	10	9½	9	9	9½	6½	6½	6½
Altrincham	9½	10½	11	10	8½	10	10	7½	7½	7½
Ashton-under-Lyne	11	11	10½	10½	9½	11	10	7	7½	8
Barnsley	10	10	9½	9½	9	9½	8½	7½	7½	7½
Barrow-in-Furness	10½	11	10½	10½	10½	10½	10½	8	8	8
Barry	9½	9½	9½	10	—	9	8½	6½	6½	6½
Bath	9	9	9	8½	8½	9	8	6½	6½	6½
Bedford	8	8	9	8½	8	9	6½	5½	5½	6
Birkenhead	1/-	1/-	1/-	1/-	1/-	1/-	11	8	8	8
Birmingham	11½	11½	11½	11½	10½	11½	10½	8½	8½	8½
Bishop Auckland	9	9	9	9½	11	9	8	6½	6½	7½
Blackburn	10	10½	10	10	9½	10	9½	7	7½	7½
Blackpool	11	9½	9½	9½	8½	9½	9½	6	6	6
Bolton	10½	11	10½	10½	10	10†	9½	6–7	7	7½
Bournemouth	8½	9	9	9	8½	9	8½	6½	6½	6½
Bradford	10½	10½	10	10	10	10	9½	8	8	8
Bridgwater	6½	6½	6½	6½	6½	6½	6	4	4	4
Brighton	9	9	9	9	—	9	7½	6½	6½	6½
Bristol	11	11	10½	11	—	11	10	8	8	8
Burnley	10	10½	9½	9½	8½	9½	9½	7	7½	7½
Burton-on-Trent	9½	9½	9½	10	9	9½	8½	7	7	7
Bury	11	11	10½	9½	10	10½	10	7	7½	7½
Cambridge	9½	9	9	9½	9½	9½	7½	6	6	6
Canterbury	8½	8	8	10	—	8½–9	7	5	5	5
Cardiff	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Chatham	8‡	10	10	9‡	9‡	10	8½	7	7	7
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½*
Chester	9½	10½	10	9½	9½	10½	9½	6½	7	7
Chesterfield	9	9½	9	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	9	8	9	6	5½	5½	5½
Coventry	10½	11	11	10½	11	11	10	8½	8½	9
Crewe	7½	8	7½	9	8½	8½	8	5½	5½	6
Darlington	9½	10	10½	10½	10	9½	9	7	7	7
Derby	9½	10	9½	9	9	9½	8	7	7	7½
Doncaster	9½	9½	9½	9½	9	9	8	6½	6½	7½
Dudley	8½	10	10	8½	8½	8	7½	6½	6½	6½
Durham	9½	9½	9½	9½	10	9	8½	6½	6½	7
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	8	8½	8½	8½	7½	7½	7½	5½	5½	5½
Folkestone	8½	9	9	9½	8½	9	8	7	7	7
Gloucester	8	9	9	8	8	9	8	7	7	7
Grantham	8	8	7½	7½–8	7½–8	7	6½	5	5	5
Grays	—	10½	10½	—	—	9½	9	7½	7½	7½
Grimsby	9	9	9½	9½	9	9	8½	7	7	8
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	10	10	9½*	9	9	9	9½	8	8	8
Harrogate	9½	9½	9½	9	8	10	8½	6½	6½	6½
Hartlepools	10	10½	10½	10½	11	10½	9	7½	7½	8
Hastings	8½	8	8	8½	8	8	7	6½	5½	6½
Hereford	8	8	7½	8½	8	7	7	5½	5½	5½
Huddersfield	11	11	10½	9½	10	9	8½	7½	7½	7½
Hull	10½	10½	10½	10½	10½	10	9	8½	8½	8½
Ipswich	8½	9	9	9	9	9½	7½	6	6	6
Lancaster	10½	10	10	10	9	10	9	6	6½	7½
Leamington Spa	9	9	9	8½	9	9	8	6½	6½	6½
Leeds	10½	10½	10½	10½	10½	11	9	8	8	8½
Leicester	10½	10½	10½	10½	11	10½	9	8	8	8½
Lincoln	9	9½	9½	9	8½	8½	8	6	5½	6½
Liverpool	1/-	1/-	1/-	11½	11½	1/-	10½	8	8	8
Llanelly	9½	9½	9½	8½	9	8½	8	5½	5½	5½
London	1/0½	1/0½	1/0½	1/0½	—	1/1	10	9	9	9
Loughborough	9	8½	9	9	9	8½	8½	5½	5½	6½
Luton	9½	9	9	8½	9	8½	7½	6½	6½	6½
Maidstone	9	9	9	9	9	9	8	6	6	6
Manchester	11	11	11	11	10	1/-	10½	7½	7½	7½
Mansfield	8½	10	9½	8½	—	9½	9	7	7	7
Merthyr Tydfil	9½	9½	9½	9½	9½	9	8½	6½	6½	6½
Middlesbrough	10	10½	10½	10½	11	10½	9	7½	7½	8
Newcastle-on-Tyne	11	11	11	11	11	10½	10	7½	7½	7½
Newport, Mon.	10	10	10	10	8½	10	9½	7	7	7
Northampton	9	9	9	9	8½	9	8	6	6	6
Norwich	8½	8½	8½	8½	8	8½	7½	6	6	6
Nottingham	11	11	11	10½	10½	11	10	8½	8½	9
Oldham	11	11	11	10	10	10†	9½	7½	7½	7½
Oxford	9½	9	9	9	8	9	8	6½	6½	6½
Plymouth	9*	9*	9*	9*	9	9*	8½	6½*	6½*	6½*
Pontypridd	9½	9½	9½	9½	9½	9½	8½	6½	6½	6½
Portsmouth	9½‡	9½‡	9½‡	9½‡	9½‡	8½‡	7½‡	7‡	7‡	7‡
Preston	10½	10½	10	9½	9½	10	9	6	7	7½
Reading	9	9½	9½	10½	—	9½	8½	6½*	6½*	6½*
Rochdale	10½	10½	10½	10	9½	10	9½	7½	7½	7½
Rochester	8	10	10	9	9	10	8½	7	7	7
Rugby	10	10	10	10½	8½	10	9	7	7	8
St. Albans	9	9	9	9–10	9	9–10	8	7	7	7
St. Helens	9	9½†	10†	9½	9½	9½	10½	6	6½	6
Scarborough	9	9½	9	8½	8	9	8	7	7	7
Sheffield	10½	10†	10½†	9½	10½	10½	9	7½	7½	7½
Shrewsbury	8½	9½	9½	9½	—	8½	7	6½	6½	6½
Southampton	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	11	10	10½	10	10	10‡	10	7	7½	7½
South Shields	11	11	11	11	11	10½*	10	7½	7½	7½
Stockport	11	10½	10½	10½	10½	10	9½	7	7½	7½
Stockton-on-Tees	10	10½	10½	10½	11	10½	9	7½	7½	8
Stoke-on-Trent	9	9½	9	9	—	8½	8½	6	6	—
Stroud	8	8	8	8	7½	7½	7½	6	6	6
Sunderland	11	11	10½	11	11	9½	9½	7½	7½	7½
Swansea	10½	10½	10½	10½	10½	9	10	7½	7½	7½
Taunton	7	7	7	7	—	6	6½	4½	4½	4½
Torquay	8	8	8	8	8	8	8	6	6	6
Wakefield	10	10	9*	9½	8½	9	9	7½	7½	7½
Walsall	10½	10	10	10	9½	10	8½	7½	7½	7½
Warrington	8½	10½	10½	10½	8½	10½	9½	6½	6½	6½
West Bromwich	11	11	10	10½	—	10	8	8	8	8
Wigan	10½	11	10	10	9½	10½	9½	7	7	7
Windsor	9	9	9	10	—	9	—	6	6	6
Wolverhampton	10½	10½	10½	11	8	10	9	7½	7½	7½
Worcester	8½	9½	9½	9½	9	9½	8	6½	6½	6½
York	9½	9½	9½	9½	10	9½	8½	7	7	7

The Mason's rate given is for bankers; fixers usually ½d. per hour extra.

*War bonus of 2s. per week granted. † War bonus of 3s. per week granted. ‡ War bonus of 2s. 6d. per week granted.

List of Competitions, Contracts, etc.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number: Competitions, —; Contracts, iv.; Public Appointments, —; Auction Sales, xviii. Certain conditions beyond those given in the following information are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

***** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

Contracts.

BUILDING AND PAINTING.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

OCTOBER 28.—**Stockton-on-Tees.**—BUILDING.—For new building required at the gasworks, for the Corporation. Specification, etc., of Mr. M. Dunn, M.Inst.C.E., Engineer and Manager.

OCTOBER 31.—**Merthyr Tydfil.**—HOUSES.—For erecting two houses at Gellifaclog, Merthyr Tydfil. Plans, etc., of Mr. T. Edmund Rees, M.S.A., architect, Merthyr Tydfil.

NOVEMBER 4.—**Millbrook.**—PAINTING, ETC.—Cornwall C.C. Standing Joint Committee invite tenders for external painting and minor repairs at Millbrook Police Station. Specifications, etc., of Mr. L. D. Thompson, County Surveyor, County Hall, Truro.

NOVEMBER 7.—**Sheffield.**—FITTERS' SHOP.—The Electric Supply Committee invites tenders for the erection of new fitters' shop. Drawings, specification, etc., of Mr. S. E. Fedden, general manager and engineer, Commercial-street, Sheffield. Deposit, £1 1s.

FURNITURE, MATERIALS, etc.

OCTOBER 28.—**Glasgow.**—MATERIALS.—Supply to the Corporation of builders' materials, etc., for six months from December 1 next. Specifications of Mr. W. Greig, Superintendent of Cleansing, 20, Trongate, Glasgow.

NOVEMBER 4.—**Walsall.**—CEMENT, ETC.—Supply to the Corporation Tramways Department for the year 1917 of cement, etc. Forms of tender at the Tramway Manager's Office, St. Paul's Buildings, The Bridge, Walsall.

NOVEMBER 11.—**Bradford.**—MATERIALS.—Supply to the Tramways Department of builders' materials. Schedules and conditions of tender at the Tramways Offices, 7, Hall Ings, Bradford. Deposit, £1 1s.

ENGINEERING, IRON, AND STEEL.

OCTOBER 28.—**Runcorn.**—WATER PIPES, ETC.—Supply to the U.D.C. of vertically cast, cast-iron, spigot, and socket water pipes, coated with Dr. Angus Smith's solution inside and out, about 1,400 lineal yds., about 59 tons; also for 6-in. sluice valves, 2½-in. hydrants, hydrant casings, and valve casings. Specifications, etc., from Mr. James Wilding, F.S.I., Surveyor and Water Engineer, Town Hall, Runcorn.

OCTOBER 30.—**Dublin.**—REPAIRS TO ECONOMISERS.—The Electricity Supply Committee of the Corporation invite tenders for repairs to the Green's economisers at the Pigeon House Generating Station. Specifications, etc., at the Generating Works, Pigeon House Fort, Dublin. Deposit, two guineas.

OCTOBER 30.—**Manchester.**—PIPES.—Supply to the Waterworks Committee of about 308 tons of cast-iron hydraulic (high pressure) pipes (6 in., 5 in., 4 in., and 3 in. diameter) and about 17 tons of specials. Specifications of the Secretory, Waterworks Offices, Town Hall, Manchester.

OCTOBER 31.—**Turton.**—PURCHASE OF PLANT.—The U.D.C. invites tenders for the purchase of the following plant:—One 6-n.h.p., 20-b.h.p. Max. Portable Engine, by Ruston & Proctor, Ltd., insured 120 lb., tested 210 lb.; one 13 in. by 8 in. Broadbent stonebreaker. Mr. J. B. Goulburn, Clerk to the Council, Council Offices, Bromley Cross, near Bolton.

NOVEMBER 4.—**Matlock.**—TRAMWAY CABLE.—Supply to the Matlock Council of steel wire tramway cable, length 1,967 yds, circumference 3¾ in. with Manila core, delivered at Tramway Depôt, Matlock. Particulars from Mr. J. D. Evans, Tramway Manager, Town Hall, Matlock.

NOVEMBER 21.—**Wallasey.**—GAS PLANT.—The Corporation invites tenders for the supply and erection of 25 per cent. liquor concentrating plant and connections at the Gas Works, Poulton-cum-Seacombe, Wallasey. Provisional specification, etc., of the Engineer, Mr. J. H. Crowther, at his office, Limekiln-lane, Seacombe, Wallasey.

ROAD, SANITARY, AND WATER WORKS.

OCTOBER 28.—**Runcorn.**—MAIN.—The U.D.C. invites tenders for the cutting and laying of about 1,400 yds. of 6-in. main. Specifications, etc., from Mr. James Wilding, F.S.I., Surveyor and Water Engineer, Town Hall, Runcorn.

OCTOBER 30.—**Wangford.**—ROAD MATERIALS.—Supply to the R.D.C. of road materials Tender forms from Mr. S. W. Rix, Clerk, Beccles.

NOVEMBER 1.—**Norwich.**—GRANITE.—Supply to the Norfolk C.C. of granite for the year ending December 31, 1917. Full particulars from Mr. W. W. Gladwell, County Surveyor, The Shirehouse, Norwich.

NOVEMBER 1.—**Wigan.**—GRANITE SETTS.—Supply of 300 tons of granite setts to the Tramway Committee. Form of tender from Mr. A. T. Gooseman, Borough Engineer, Wigan.

NOVEMBER 9.—**London.**—PAVING FLAGS.—Supply to the Lambeth B.C. of 5,000 super. ft. of 2½-in. sawn stone paving flags from Yorkshire or Lancashire quarries. Forms of tender from Mr. Henry Edwards, C.E., Borough Engineer, Lambeth Town Hall, Brixton Hill, S.W.

Auction Sale.

* NOVEMBER 9.—**Seven Sisters-road, N.**—Mr. H. W. Smith will sell by auction the stock and plant of a builder's merchant.

[Those with an asterisk (*) are advertised in this issue.]

A PATENT COMBINATION RANGE.

MESSRS. O'BRIEN, THOMAS, & Co., in association with Messrs. Yates, Haywood, & Co., have recently introduced into their show-rooms, 17, Upper Thames-street, E.C., a new cooking range on the central heating system. It is known as the "Ofa," a patent combination range for cottages, etc., with one fire for all purposes. The patentee is Mr. George E. Clare, M.S.A., architect, 2, College-road, Harrow. The best way of warming a house is to combine ventilation with the warming apparatus, and it is claimed that the "Ofa" system does this. Fresh warm air is admitted by fresh-air inlets and vitiated air drawn off by outlets, and the atmosphere of the house kept at a comfortable temperature. This is accelerated by the provision of one open fire for occasional use. This ventilating system can be used also in the summer for keeping the house cool. The "Ofa" central heating one fire system is very economical, coke being combined with a small quantity of coal, which is the best fuel, and the cost of warming a small house, domestic cooking, and hot-water supply works out at about 4d. per day. This system, it is claimed, gives the economic advantages of central heating, combined with ventilation, domestic hot-water supply, and cooking apparatus from one fire in the kitchen, and the warming of all the principal rooms of the house is under control. The range is complete in itself and of the portable type, so that setting is very simple. Apart from saving in the cost of brickwork, the "Ofa" cottage range, we understand, effects a saving in cost of fittings of about £5, as it combines in one a kitchen range, a sitting-room grate, a washing copper, and two bedroom grates. The large amount of heat that usually passes to waste up the chimney from the ordinary range is utilised for warming a useful drying chamber in the kitchen or scullery. Above this there is a warm-air chamber, to which fresh air is admitted, and the warm air passes to the bedrooms in the winter and fresh air in the summer. If desired, a horse-power boiler can be provided in the "Ofa" range and heated by either fire, so that the bathroom can be on the first floor. In this case the copper would be used for laundry purposes only and for heating the steamer and saucepans. The new "Registered Ofa" steamer has a reservoir that prevents the water running dry. It has three decks, and fits into the lid of the copper, and it will cook a complete meal without any attention. The range has another advantage—although all the benefits of the fire can be obtained in the living-room, the cooking is all done in the scullery or kitchen; this avoids the inconvenience and waste of time experienced with the use of any kind of fitting with an oven in the living-room, necessitating continuous passing from that room to the kitchen during the process of cooking. All ashes are removed from the scullery side. We may add that the Government have already installed these ranges in some of their small house property.

PATENTS.

APPLICATIONS PUBLISHED.*

12,590 of 1915.—John Thomas Taylor and Matthew Henry Herd: Means for and method of lighting up the gangways of picture palaces and the like.

12,694 of 1915.—Arthur Francis Berry: Apparatus for heating and otherwise treating the air supply to buildings and the like.

12,909 of 1915.—Lionel Henry Teale: Domestic fireplaces.

12,947 of 1915.—Mead, McLean, & Co., Ltd., and Albert Alfred Mead: Sliding windows and particularly carriage windows.

12,988 of 1915.—Thomas Gibbons Marlow and the Pulsometer Engineering Company: Apparatus suitable for drying, heating, cooling, or ventilating purposes.

12,993 of 1915.—Henri Jean Clément Simson (Peter Saldau, Russia): Apparatus for determining the "critical" or "conversion" point of samples of iron or steel by measuring the electrical resistance of a test piece of such metal whilst heated to a high temperature.

13,126 of 1915.—Herbert Austin: Boring bars.

13,219 of 1915.—William Charles Phipps: Fittings for attaching portable bulkheads, partitions, screens, and the like to pillars and standards.

* **These applications are now in the stage in which opposition to the grant of Patents upon them may be made.**

PRICES CURRENT OF MATERIALS.

[Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.]

Since our last issue the price of oil has been revised.—ED.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 0 0
Picked Stocks for Facings	2 12 0

Per 1000, Delivered at Railway Depôt, London.	£ s. d.		£ s. d.
Flettons	1 13 0	Best Blue Pressed Staffordshire	5 7 0
Best Fareham Red	3 12 0	Do. Bullnose	5 12 0
Best Red Pressed Ruabon Facing	5 5 0	Best Stourbridge Fire Bricks	7 0 0

GLAZED BRICKS—			
Best White, Ivory, and Salt Glazed Stretchers	13 7 6	D'ble Str'tch'rs	18 17 6
Headers	12 17 6	Double Headers	15 17 6
Quoins, Bullnose and 4½ in. Flats	16 17 6	One Side and two Ends	19 17 6
		Two Sides and one End	20 17 6
		Splays and Squints	18 7 6

Second Quality £1 per 1,000 less than best.

	s. d.	
Thames Ballast	8 3	per yard, delivered.
Thames and Pit Sand	9 6	" " "
Best Washed Sand	10 0	" " "
¾ in. Shingle for Ferro-Concrete	8 6	" " "

Per ton, delivered.	£ s. d.		£ s. d.
Best Portland Cement	2 5 0	..	2 8 0

Do. £2 1s. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime .. 1 5 6 at rly. depôt.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.
Grey Stone Lime ..... 18s. 0d. per yard delivered.
Stourbridge Fireclay in s'cks 35s. 0d. per ton at rly. dpt.

STONE.

BATH STONE—delivered in railway trucks at	s. d.
Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depôt	1 9½

PORTLAND STONE—

Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Westbourne Park, G.W.R., South Lambeth, G.W.R., or Nine Elms, or L. & S.W.R., per ft. cube	2 5½
Do. do. delivered on road waggons at Pimlico Wharf or Nine Elms Depôt, per ft. cube	2 6½

White basebed, 2d. per ft. cube extra.

RANDOM BLOCKS—Per Ft. Cube, delivered at Rly. Depôt.	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red Freestone	2 2
Beer in blocks	1 7½		
Grinshill in blocks	2 4	Red and White Mansfield random block	2 0
Darley Dale in blocks	2 5	Yellow Magnesian Limestone do. do.	3 3

YORK STONE—*Robin Hood Quality.*

Per Ft. Cube, Delivered at Railway Depôt.	s. d.
Scappled random blocks	3 4

Per Ft. Super. Delivered at Railway Depôt.	
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 5
6 in. rubbed two sides, ditto	2 8
3 in. sawn two sides slabs (random sizes)	1 0½
2 in. to 2½ in. sawn one side slabs (random sizes)	0 8½
1½ in. to 2 in. ditto, ditto	0 6½

HARD YORK—

Per Ft. Cube, Delivered at Railway Depôt.	
Scappled random blocks	3 0

Per Ft. Super., Delivered at Railway Depôt.	
6 in. sawn two sides landing to sizes (under 40 ft. super.)	2 3
6 in. rubbed two sides ditto	2 7
3 in. sawn two sides slabs (random sizes)	1 0
2 in. self-faced random flags	0 5

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles or hand-made sand-faced tiles from either Broseley or Staffordshire district	2 12 6
Ornamental ditto	2 15 0
Hip and valley tiles (per dozen)	0 5 6

SLATES.

	Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates, 20 by 10	12 0 0
First quality " "	11 15 0
" " 16 by 8	6 0 0
Best Blue Portmadoc, 20 by 10	11 17 6
First quality " "	11 7 6
" " 16 by 8	6 0 0

WOOD.

BEST BUILDING REDWOOD. Imported sizes.	Nominal. Per standard. £ s. d.		£ s. d.
Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in.	35 0 0	..	36 0 0
9 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in.	34 0 0	..	35 0 0

WOOD (*Continued*).

BEST BUILDING REDWOOD.	Per standard. £ s. d.		£ s. d.
Battens: 2 in., 2½ in., and 3 in. by 8 in. ; 2 in., 2½ in., and 3 in. by 7 in. ; 2 in., 2½ in., and 3 in. by 6 in.	32 0 0	..	33 0 0
Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in. ; 3 in. by 4 in., and 3 in. by 4½ in.			
Boards: 1 in., 1¼ in., and 1½ in. by 6 in. and 7 in.	0 10 0		more than battens.
¾ in.	1 0 0		
Seconds	1 0 0		less than best
Best Middling Dantzic and Memel Fir Timber Logs (average specification)	Per load of 50 ft. cube. 10 0 0	..	—
Stocks very limited.			
Sawn pitch pine logs (about 35 cu. ft. average)	Per load. 14 0 0	..	15 0 0
Do. 6 in. to 10 in.	12 0 0	..	13 0 0
	Per standard.		
Best Pitch Pine Deals	36 0 0	..	46 0 0
Under 2 in. thick	0 10 0		extra.

JOINERS' WOOD.			
White Sea First Quality Red: 4 in. by 11 in.	43 0 0	..	44 0 0
3 in. by 11 in., and 2 in. by 11 in.	42 0 0	..	43 0 0
4 in. by 9 in.	38 0 0	..	39 0 0
3 in. by 9 in., and 2½ in. by 9 in.	37 0 0	..	38 0 0
9 in. by 11 in. boards	1 0 0	..	more than deals.
7 in. and 8 in. battens	34 0 0	..	35 0 0
7 in. and 8 in. boards	1 0 0	..	more than battens.
Archangel White Deals—Best 3 in. by 9 in. and 10 in. and 11 in.	40 0 0	..	44 0 0
Seconds, do.	2 0 0		less than best.
U.S. Battens	31 0 0	..	33 0 0
Prepared Floorings and Matchings, Seconds Swedish Red and equal—	Per square actual.		
1¼ in. by 6½ in. planed and shot	2 2 0	..	2 3 0
1¼ in. by 6½ in. planed and matched	2 3 0	..	2 4 0
1 in. by 6½ in. planed and shot	1 10 0	..	1 13 0
1 in. by 6½ in. planed and matched	1 11 0	..	1 12 0
¾ in. by 6½ in. planed, matched, and beaded, or V jointed	1 6 0	..	1 8 0
1 in. by 6½ in. do.	1 10 6	..	1 12 0
Columbian or Oregon Pine, best quality	Per standard. 50 0 0	..	55 0 0
Yellow Pine—First regular sizes	57 0 0		upwards.
Oddments	39 0 0		"
Seconds, regular sizes	43 10 0		"
Oddments	37 10 0		"
Kauri Pine—Planks per ft. cube	0 8 0	..	—
Wainscot Oak Logs, per ft. cube	0 10 6	..	0 12 6
Dry Wainscot Oak, per ft. super, as inch.	0 1 0	..	0 1 1
¾ in. do. do.	0 0 10	..	0 1 0
Dry Mahogany — Honduras, Tabasco, per ft. super, as inch	0 1 0	..	0 1 4
Cuba, Mahogany	0 1 6	..	0 2 6
Dry Walnut, American, per ft. super, as inch	0 1 0	..	0 1 3
French, "Italian," Walnut	0 1 0	..	0 1 6
Teak, per load (Rangoon or Moulmein)	26 0 0	..	30 0 0
Do. do. (Java)	24 0 0	..	26 0 0
American Whitewood planks, per ft. cube	0 8 6	..	0 9 0
Glue, per cwt.	3 15 0	..	3 19 0

METALS.

JOISTS, GIRDERS, &c.

Rolled Steel Joists, ordinary sections, basis price
Plain Compound Girders, ordinary sections
Plain Compound Stanchions
Angles, Tees, and Channels, ordinary sections
Flitch Plates
Cast Iron Columns and Stanchions plain ordinary patterns

Prices controlled by the Ministry of Munitions.

WROUGHT-IRON TUBES AND FITTINGS—
Discounts off Association Prices.

	Tubes. Per Cent.		Fittings. Per Cent.
Gas at works	47½	....	50
Water "	42½	....	47½
Steam "	37½	....	45
Galvanised gas at works	30	....	42½
" water "	21½	....	40
" steam "	15	....	37½

L.C.C. SOIL PIPE—	London Prices. Pipes Coated. s. d.		Bends. s. d.		Branches. s. d.
2 in.	2 7	....	1 10	....	2 2
2½ in.	3 0	....	2 0	....	2 9
3 in.	3 9½	....	2 2	....	3 4
3½ in.	4 2	....	2 9	....	3 10
4 in.	4 6½	....	3 1	....	4 5

RAIN-WATER PIPES, ETC.—	London Prices. Pipe. s. d.		Bends. s. d.		Branches. s. d.
2 in.	1 10½	....	1 0	....	1 4
2½ in.	2 1	....	1 2	....	1 8
3 in.	2 4½	....	1 5	....	2 2
3½ in.	2 11½	....	1 9	....	2 7
4 in.	3 2	....	2 1	....	3 1

METALS (*Continued*).

L.C.C. DRAIN PIPES—	London Prices. £ s. d.		£ s. d.
4 in., 4s. 6d. .. 5 in., 5s. 6d. .. 6 in., 6s. 6d.			
IRON— Per ton, in London.			
Common Bars	16 0 0	..	—
Staffordshire Crown Bars, good merchant quality	16 0 0	..	17 0 0
Staffordshire "Marked Bars"	17 10 0	..	18 0 0
Mild Steel Bars	18 0 0	..	18 10 0
Steel Bars, Ferro-Concrete quality, £18 basis price.			
Hoop Iron, basis price	20 0 0	..	20 10 0
" " Galvanised	33 0 0	..	—
(* And upwards, according to size and gauge.)			
Sheet Iron Black—			
Ordinary sizes to 20 g.	21 0 0	..	21 10 0
" " 24 g.	22 0 0	..	22 10 0
" " 26 g.	23 0 0	..	23 10 0
Sheet Iron, Galvanised flat, ordinary quality—			
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	31 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	31 0 0	..	31 10 0
Ordinary sizes to 26 g.	34 0 0	..	—
Sheet Iron, Galvanised, flat, best quality—			
Ordinary sizes to 20 g.	34 0 0	..	—
" " 22 g. and 24 g.	34 10 0	..	—
Ordinary sizes to 26 g.	37 10 0	..	—
Galvanised Corrugated Sheets—			
Ordinary sizes, 6 ft. to 8 ft. 20 g.	29 0 0	..	—
Ordinary sizes, 22 g. & 24 g.	29 10 0	..	—
Ordinary sizes, 26 g	30 0 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	23 10 0	..	—
Best Soft Steel Sheets, 22 g. and 24 g.	23 15 0	..	—
Best Soft Steel Sheets, 26 g.	25 10 0	..	—
Cut Nails, 3 in. to 6 in.	24 0 0	..	25 0 0
(Under 3 in., usual trade extras.)			

LEAD, &c.

Delivered in London.	£ s. d.		
LEAD—Sheet, English, 4 lb. and up	39 0 0	..	—
Pipe in coils	39 10 0	..	—
Soil pipe	42 10 0	..	—
Compo pipe	42 10 0	..	—
NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra.			
COPPER—			
Strong Sheet per lb.	0 1 6	..	—
Thin " "	0 1 8	..	—
Copper nails "	0 1 6	..	—
Copper wire "	0 1 8	..	—
BRASS—			
Strong Sheet "	0 1 6	..	—
Thin " "	0 1 8	..	—
TIN—English Ingots "	0 1 10	..	—
SOLDER—Plumbers' "	0 0 10	..	—
Tinmen's "	0 1 1	..	—
Blowpipe "	0 1 3	..	—

GLASS.

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES AND IN SQUARES IN ORDINARY SIZES.

Per Ft.		Per Ft.	
15 oz. fourths	4d.	26 oz. thirds	6½d.
" thirds	4½d.	32 oz. fourths	6½d.
21 oz. fourths	5d.	" thirds	8d.
" thirds	5½d.	Fluted Sheet, 15 oz.	5½d.
26 oz. fourths	5½d.	" 21 oz.	6½d.

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

	Per Ft.
¼ Rolled plate	4d.
⅜ Rough rolled and rough cast plate	4½d.
½ Rough rolled and rough cast plate	4½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic Muffled, and "Stippolyte," white	4½d.
Ditto, tinted	6½d.
Rolled Sheet	4½d.

PAINTS, &c.

		£ s. d.
Raw Linseed Oil in pipes per gallon		0 3 8
" " " in barrels	"	0 3 9
" " " in drums	"	0 4 0
Boiled " " in barrels	"	0 3 11
" " " in drums	"	0 4 3
Turpentine in barrels	"	0 3 8
" in drums	"	0 3 11
Genuine Ground English White Lead, per ton (In not less than 5 cwt. casks.)		56 0 0
Red Lead, Dry	per ton	58 0 0
Best Linseed Oil Putty	per cwt.	0 11 0
Stockholm Tar	per barrel	4 5 0
Filocol	per cwt.	0 9 6
GENUINE WHITE LEAD PAINT— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots per ton delivered		68 0 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 9
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 13 0
Knotting	0 13 0
French and Brush Polish	0 13 0

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* Denotes *accepted.* † Denotes *provisionally accepted.*

ENFIELD.—For repairs to Ponder's End Fire Station, for the Enfield District Council :—
Newby Bros.* £47

ENNISKILLEN.—For alterations to Heathdale House (Mullaghdun Rectory), for the Select Vestry, Mullaghdun. Messrs. F. E. Townsend & Son, architects, Enniskillen :—
J. Bloomfield, Brookeborough, Co. Fermanagh* £400

EYE (Suffolk).—For erection of a cottage in the grounds of the new infirmary building at Eye, for the Hartismere Guardians. Mr. Herbert J. Green, architect, 31, Castle-meadow, Norwich :—
E. J. Smith £550 0
A. J. Gibbons, Crowfield, near Ipswich* 420 19

GLASGOW.—For construction of concrete outfall culvert at Dalmarnock Generating Station, for the Corporation :—
Train & Taylor‡ £8,500
‡ Recommended for acceptance.

HALIFAX.—For execution of various works at the Skircoat Tram Depôt, for the Corporation :—
Plumber's Work: Boocock & Sons* £118 5 0
Slater's Work: J. Smith* 36 9 10
Joiner's Work: J. Fielding & Son,* actual cost plus 20 per cent.

HALIFAX.—Supply of steel air duct, dampers, and trestle required for turbo at electricity works :—
Drakes, Ltd. £116 10

LONDON.—Supply of five dust-vans to the Lewisham Borough Council :—
A. Stening ..... £72 0 0 each
J. W. Glover & Sons ..... 69 12 0 „
Eagle Engineering Co. ..... 66 0 0 „
J. Smith & Sons‡ ..... 59 17 6 „
‡ Recommended for acceptance.

LONDON.—For the supply of wood-paving blocks, for the Westminster City Council :—
Armstrong, Addison, & Co.,‡ 30,000 4½ in. by 9in., £15 15s., 30,000 5 in. by 9 in., £17 9s. per 1000.
English Bros., Ltd.,‡ 10,000 4½ in. by 9 in., £17 5s., 10,000 5½ in. by 9 in., £20, 5,000 5½ in. by 9in., £21, 5,000 6 in. by 9 in., £21 15s. per 1000.
‡ Recommended for acceptance.

LONDON.—For repairs to sewers in Churton-street and Little College-street, for the Westminster City Council :—

Churton-Street.	
T. Adams	£1,046 13 8
E. Rogers & Co.	631 0 0
D. R. Paterson, Ltd.	582 4 10
Bovis, Ltd.‡	559 4 9
J. Ford	471 2 1
H. Boyer	400 9 3
J. A. Ewart, Ltd.	384 7 0
J. Mowlem & Co., Ltd.§	352 10 11
Little College-Street.	
T. Adams	686 18 8
Bovis, Ltd.‡	398 5 9
E. Rogers & Co.	273 0 0
D. R. Paterson, Ltd.	250 10 10
J. Ford	288 5 0
H. Boyer	258 12 5
J. A. Ewart, Ltd.	236 11 3
J. Mowlem & Co., Ltd.§	228 17 6

‡ Plus 5 per cent. § Recommended for acceptance.

SWINDON.—For painting wood and iron work to the outside of the hospital (including smallpox) at Gorse Hill, for the Swindon and District Hospital Board :—
H. C. Cook, Wood-street, Swindon* £173 15

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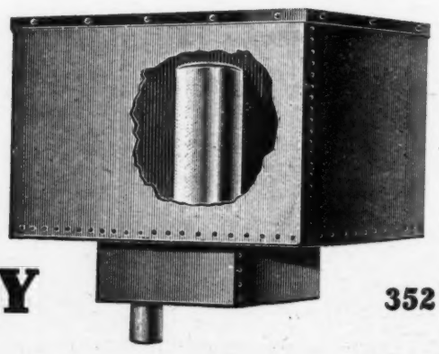
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